

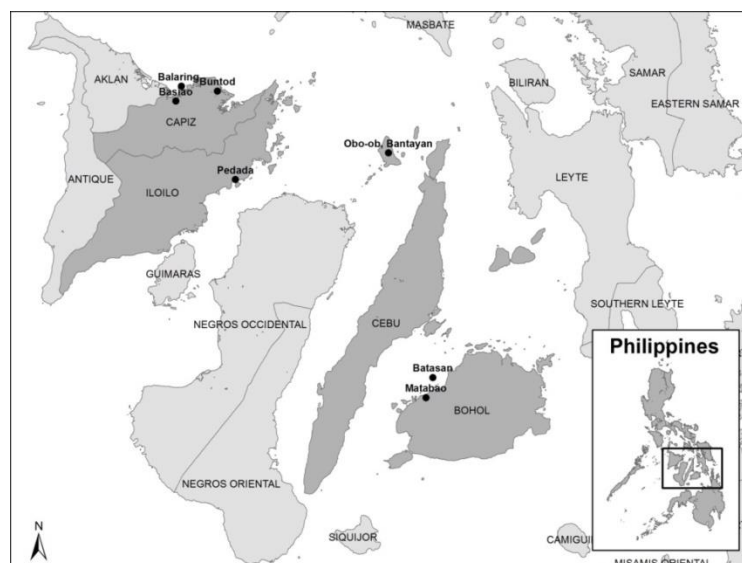
## Darwin Initiative Final Report

### Darwin project information

Project reference	21-010
Project title	Linking community resilience and sustainable coastal protection in the Philippines
Host country(ies)	Philippines
Contract holder institution	Zoological Society of London
Partner institution(s)	Department of Environment and Natural Resources (DENR), Interface Inc.
Darwin grant value	£318,964
Start/end dates of project	April 2014 – March 2017
Project leader's name	Heather Koldewey
Project website/blog/Twitter	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a> ; <a href="http://www.net-works.com">www.net-works.com</a> <a href="https://www.zsl.org/blogs/conservation/">https://www.zsl.org/blogs/conservation/</a> <a href="https://twitter.com/HeatherKoldewey">@HeatherKoldewey</a> <a href="https://twitter.com/ZSLMarine">@ZSLMarine</a> <a href="https://twitter.com/nets2carpet">@nets2carpet</a> <a href="https://twitter.com/nickaohill">@nickaohill</a>
Report author(s) and date	Heather Koldewey, Josephine Savaris 14 <sup>th</sup> July 2017

### 1. Project Rationale

The project is located in the 4 provinces, Capiz, Iloilo, Bohol and Cebu. The sites (Appendix 1) that were selected experienced two massive natural disasters in 2013 the Visayas region in central Philippines i.e. the earthquake that hit Bohol and Typhoon Haiyan that hit Northern Cebu and Northern Panay. Below is the map of the sites:



The Philippines has over a 1000 MPAs scattered all over the country, however with these disasters a need to increase coastal habitat protection and community resilience to respond to climate change was urgently needed. Five major problems were identified to help rebuild communities and MPAs:

1. Most MPAs are small, falling short of national, international and ecological targets.
2. They are biased towards coral reefs, rarely including mangroves which support ~72% of fish catches and provide vital coastal protection. The Philippines has lost >70% of mangroves resulting in local fisheries collapse and increased vulnerability to climate change, demonstrated by the devastating storm surges following Typhoon Haiyan.
3. They are not yet “poor-friendly”, taking 3-10 years to increase biodiversity and fisheries, imposing opportunity costs to communities with immediate concerns of food security and livelihoods, resulting in reduced enforcement and increased infringement that undermines resilience.
4. MPAs are usually implemented independently of poverty alleviation interventions.
5. International dissemination among conservation and development practitioners is generally poor.

Sustainable MPAs must demonstrate means to bridge opportunity costs of conservation while reducing community vulnerability, particularly considering the increasing frequency and severity of typhoons and documented fisheries declines.

This project will augment current community-based MPAs by:

- Using MPAs and mangroves as focal points for community recovery following natural disasters,
- Linking livelihood diversification directly to MPAs and mangroves,
- Rehabilitating mangroves, essential for fisheries production and coastal protection,
- Increasing MPA size and management effectiveness.

Specifically the project will:

- Support 2,000 households in 10 target communities rebuild more resilient livelihoods following the natural disasters with enhanced wellbeing and food-security by:
  - Increasing the average size of MPAs from ~30 ha to ~100 ha in 2 villages.
  - Protecting and restoring mangrove habitats essential to coastal protection, fisheries production and long-term food security.
  - Enhancing financial security through the linking of VSLAs to MPA management. VSLAs reach the poorest, most vulnerable community members. Average annualised return on savings is 33%. >50% of members are female. Savings improve access to health and education services. Loans facilitate investment in new enterprises.
  - Diversifying livelihoods from an average of 2.0 (Hill 2011) to 2.5 in a way that supports conservation through encouraging active enforcement, bridges opportunity costs of these larger MPAs and is consistent with sustainable use of marine resources (mangrove nurseries, Net-Works, and aquaculture)
- Contribute directly to national and international targets for marine protection in the Philippines by increasing the area of well-managed mangroves with MPAs by 1,000 ha in 4 provinces in the Philippines.
- Provide a model for sustainable MPAs that support livelihood development in other countries that look to the Philippines as an example.

The project was designed to increase MPA effectiveness by a) connecting MPAs with sustainable livelihood options, and b) diversifying habitats protected, focussing on mangroves due to the vital ecosystem services they provide.

### **1. Increase financial resilience in coastal communities**

We will implement Village Savings and Loan Associations (VSLAs), tried and tested self-sustaining community savings groups. VSLA-training by ZSL staff in 10 communities, benefitting

an additional 320 households (year 3), will build on our experience in Bohol. VSLAs are the platform for improved coastal protection and access to new enterprises.

## **2. Livelihood diversification for conservation**

We will diversify livelihoods that allow individuals to rebuild income sources following recent disasters in a way that supports increased resilience:

- **Net-Works:** A ZSL/Interface community-based supply chain for discarded monofilament fishing nets. Communities are paid by Interface for nets, encouraging beach clean-ups. Nets are exported and recycled into carpet tiles. In year 1, participating Bohol villages have collected an average of 200 kg of nets/village/month, totalling >12 tonnes (July 2013). 2.5 kilos of nets equates to 1 kilo of rice. We will replicate this positive experience in target sites.
- **Aquaculture:** Based on our research recommendations, seaweed farming zones will be appropriately located proximate to MPAs. Philippines' research institutions (e.g. SEAFDEC) will technically inform the feasibility of community grow-out of valuable species (e.g. mussels, sea-cucumber, abalone) adjacent to MPAs. These aquaculture zones will act as effective MPA buffer zones.
- **Mangrove-related enterprises:** ZSL has shown viable livelihoods can be generated from community mangrove nurseries supplying government/corporate replanting schemes, and community-managed eco-parks that protect biodiverse, mature forests and raise local awareness. We will apply these livelihoods to our project sites.

## **3. Enhance effectiveness and sustainability of MPAs with mangroves.**

We will target sites badly affected by natural disasters, using mangrove rehabilitation with MPAs as mechanisms to restore coastal bioshields, fisheries and biodiversity, while rebuilding associated livelihoods. Our expertise will help:

- a) Recover and strengthen two community-managed MPAs and three mangrove sites (Bohol, Bantayan, Capiz, Iloilo).
- b) Implement two new mangrove MPAs in Bantayan (Cebu Province), Capiz and Iloilo.
- c) Build/rebuild enforcement capability in four MPA sites, including guardhouses linked to livelihood diversification, marker buoys, signage and patrol boats.
- d) Provide evidence for positive impacts MPAs have on marine life through biological surveys that engage and train local communities and government.
- e) Ensure effective enforcement of existing coastal protection laws by implementing training of local Forest and Fish Wardens at each site.
- f) Integrate MPA and mangrove management into local government long-term rehabilitation plans.

## **1 Project Partnerships**

**Formal partnerships** that were established during the implementation of the Darwin Project were as follows:

- A. Partnership between ZSL and the Local Government Units where the Darwin sites are located:
  - Completed at Project start-up, the Memorandum of Agreements (MOA) were signed by the partners and notarized by a legal officer that articulated each other's responsibility towards the project (Appendix 2. MOAs with LGUs).
  - The MOA grants the project the permission to establish, strengthen and coordinate with the Peoples' Organisations (POs – a Philippines term for legally recognised community groups) in the identified project sites.
  - The legislation/passage of policies/ordinances/resolutions in support of the project and for the formal protection of Mangroves in Marine Protected Areas (MMPAs) was recognised and implemented as the responsibility of the relevant Local Government Unit (LGU) partner (Appendix 3. MMPA ordinances/resolutions).
  - Under the MOA the partners were encouraged to provide counterpart funds (in cash or in kind) in the activities jointly undertaken as an indicator of their commitment and support for the project and partnership activities (Appendix 4. List of counterpart funds

provided by the LGU/ other partners over the project period, totalling £67,696 at today's exchange rate).

- B. Contracting the POs in the project sites for the National Greening Project (NGP) of the Department of Environment and Natural Resources (DENR)
- 3 POs were contracted by the DENR for NGP, including Buntod Katibyugan in Panay, New Balaring Mangrove Association in Ivisan and Barangay Pedada Fisherfolk Association in Ajuy (Appendix 5. NGP contract of Buntod Katibyugan POs).
- C. Partnership between International Institute for Rural Reconstruction (IIRR) and ZSL in Ivisan
- The Darwin sites of Basiao and Balaring in Ivisan were also identified by the BRIDGE project funded by IIRR as impact areas (Appendix 6. MOA signed by ZSL and IIRR re BRIDGE project).
  - Community Managed Savings and Credit Associations (CoMSCA) formation and monitoring, BRIDGE assisted in the formation of 7 CoMSCA groups in Ivisan (Zelous Savers Legion 3, 4, 5, 6, Barangay Agustin Navarra Environmental Conservation Association Savers Group, Queen Fishers Savers Group 3) (Appendix 7. Table showing location of CoMSCA groups, and group that initiated their formation).
  - ZSL Co-authored CMDRR handbook for locals
  - IIRR Trained ZSL staff in the conduct of CMDRR that the latter applied in developing CMDRR plans in the Darwin sites (Appendix 8. Dates of CMDRR trainings conducted in the Darwin project sites).
  - ZSL trained IIRR in CoMSCA formation and even applied knowledge to their sites in Quezon province.

**Non-formal partnerships** that were established during the implementation of the Darwin Project

- A. Partnership with the DENR
- Letter of request was served to DENR Region 6 to train and deputize 21 PO leaders as Forest Wardens (Appendix 12. Deputation order by the DENR).
  - DENR Ecosystem Research Development Bureau requested for 25 staff e Training of Trainers on mangrove and beach forest rehabilitation and conservation.
  - Co-sponsored the 2<sup>nd</sup> National Mangrove Conference last 1-3 September 2015.
  - Printed and endorsed the Manual for Trainers on Mangrove and Beach Forest Rehabilitation and Conservation (Mangrove manual series #3), DENR printed 500 copies
- B. Partnership with Adventist Development Relief Agency (ADRA) in Ajuy
- ADRA provided logistical support (meals, transport, venue) for the Mangrove and Beach Forest Training Course (MBFTC) of Luca and Silagon while ZSL provided the technical input.
  - ADRA provided trainings such as Fish processing, Marketing and Packaging, Values Formation to the Pedada PO (Barangay Pedada Fisherfolk Association, BPFA) members.
  - ADRA provided the bamboos, nets and polythene bags in the establishment of mangrove/beach forest nursery of BPFA, while ZSL provided for the plastic matting.
  - Provided the payment for the facilitator's fee of ZSL in the conduct of the Participatory Coastal Resource Assessment (PCRA) of LGU Ajuy in preparation for the Coastal Resource Management (CRM) plan (Appendix 9. Service contract signed with ADRA by Josephine Savaris, Darwin Project Manager).
- C. Partnership with Net-Works in Pedada, Ajuy

- Net-Works staff in Northern Iloilo (NI) provided the orientation on Net-Works business model to BPFA.
  - Net-Works staff in NI provided orientation to BPFA nets manager.
  - Net-Works served as depository of CoMSCA and Annual International Coastal Cleanup data which the Darwin project staff accessed during reporting time.
  - Net-Works in NI purchased 3,377 kilos of fresh seaweeds from BPFA and supplied this to their farmers in Concepcion, NI.
  - Led in convening the Round Table Discussion on artificial reefs that Darwin supported with logistical support (Appendix 10. Round Table discussion on Artificial Reefs and Coral Rehabilitation proceedings/ report)
  - Led/convenor of the yearly CoMSCA summit – including inviting CoMSCA groups from Darwin sites.
  - Initiated the setting up of the environmental funds that the Darwin CoMSCA groups adopted.
- D. Partnership with Smart Communications in Buntod, Panay
- Facilitated the training/provided the tools for the driftwood sculpture livelihood project in Buntod Katibyugan.
  - Provided the venue for the Buntod Katibyugan participation in art exhibits in Manila (Appendix 11. News article featuring Rudy of Buntod Katibyugan).
  - Facilitated the publication of an article on driftwood art pieces of Buntod in the magazine Landas.
  - Referred Buntod Katibyugan to the Office of Presidential Assistant for Rehabilitation and Recovery (OPARR) that resulted in the order of 50 pieces of driftwood souvenir items during the Typhoon Haiyan commemoration program.
- E. Partnership with Philippine Tropical Forest Conservation Foundation (PTFCF)
- Provided immediate assistance of P300,000.00 to 3 POs in Buntod, Pedada and Balaring to re-establish mangrove nurseries after Typhoon Haiyan.
  - Co-sponsored the training on *Sonneratia alba* (local name pagatpat) germination by providing the technical expertise and produced the module, ZSL provided the participants, venue and logistics.
  - Provided the training support for PO leaders on project proposal writing.
- F. Partnership with the Bureau of Fisheries and Aquatic Resources (BFAR)
- Provided the materials for the farmers trial seaweed farming/production (Appendix 13. List of materials provided by BFAR to BPFA/Networks, letter of request).
  - Provided the market for the sales of fresh seaweeds.
  - Invited ZSL to participate in the seminar on Territorial User Rights for Fisheries (TURF) and the training on IUCN species Red Listing.
  - Provided the Ivisan fish catch data on all fishes, confirming the species of anchovy found in the site.
- G. Partnership with Southeast Asian Fisheries Development Centre (SEAFDEC)
- SEAFDEC provided the technical support in the conduct of site assessments for mariculture activities in Balaring (sea cucumber), Basiao (raft method of oyster farming) and Pedada (seaweeds farming).
  - SEAFDEC conducted monitoring/evaluation of growth/survival of oysters and seaweeds.
  - Provided some of the additional materials for seaweeds farming.
  - Provided training/orientation on oyster farming (raft method) and seaweeds farming.
  - Provided guidance in computing for Seaweed Growth Rate.
- H. Partnership with the GIZ PAME/Oxfam project of ZSL in Bantayan
- The more experienced Community Organiser (CO) Supervisor of Protected Area Management Enhancement (PAME) project run by GIZ supervised the Local COs of Darwin project in Bantayan at no cost to Darwin project.

- The Oxfam project provided the mangrove planting materials for rehabilitation in Oboob (60 beach forest and 1,670 *Avicennia marina*).
- ZSL through the Darwin staff trained the PO and LGU partners of the Oxfam project in Bantayan.
- The CO Supervisor of the also took the lead in the conduct of strengthening activities for the POs in Kodia and Oboob at no cost to Darwin.
- The CRM planning for Madridejos was mainly undertaken by the PAME project with assistance from the local COs of Darwin. Technical expertise was delivered by the PAME project team while Darwin provided the budget for the PCRA and the CRM planning (Appendix 14. Draft ICRM Plan of Madridejos).

## I. Partnership with Academia

### A. University of the Philippines (UP) Visayas

- Provided technical inputs and training in improving technology on processing of dried and deboned anchovies (local name dilis).
- Provided laboratory assessments of product samples for deboned anchovy production (Appendix 15. Lab results for boneless dilis).
- 6 UP Visayas College of Fisheries and Ocean Sciences students participated in the mangrove community structure (MCS) and seagrass surveys of ZSL from 2014-2016.

### B. Northern Iloilo Polytechnic State College (NIPSC) Ajuy Campus

- Provided students to assist in establishing collection points for discarded nets from fishers in coastal communities in Ajuy.
- Provided additional personnel support for the conduct of PCRA for the municipality of Ajuy.
- Allowed the participation of Prof. Johnny Cristobal as resource person during the conduct of Mangrove/Beach Forest Training Courses and Training of Trainers courses.
- The students provided additional labour in beach forest planting re NGP of BPFA in Pedada, Ajuy.

### C. International academic partners

- Provided co-supervision, hosted and supported fieldwork for PhD studies for Clare Duncan from Institute of Zoology/University College London, UK.
- Provided co-supervision, hosted and supported fieldwork for PhD studies for Dan Bayley from University College London/Natural History Museum, UK.
- Provided co-supervision, hosted and supported fieldwork for MSc studies for Ashley Perl from the Stockholm Resilience Centre, Stockholm University, Sweden.
- Provided supervision and field support for a 3 month internship for a Filipina undergraduate student during her studies at the Analyses et Techniques d'Inventaires de la Biodiversité Université de Claude Bernard, Lyon, France.
- Hosted research workshops and stakeholder interviews with Jeremy Horowitz, PhD student at James Cook University, Australia.
- Supported field work for Filipina postgraduate researcher Dr Laurece Jamero based at the University of Tokyo, Japan.

## **Strengths**

- The partners provided personnel to help in undertaking project targets such as the CoMSCA formation in Ivisan for IIRR.
- IIRR, SEAFDEC provided the technical expertise such as bio-intensive gardening, raft method of oyster farming, and seaweed farming which eventually became a source of livelihood for the POs.

- SEAFDEC deployed scientists to conduct thorough assessments of the sites which became the basis for decision-making whether to push through with the project or not i.e. sea cucumber ranching, seaweed farming, oyster farming.
- The Darwin project saved some project funds since the partners provided the bulk of the budget i.e. ADRA nursery establishment, BFAR rafts, BFAR/SEAFDEC materials for seaweeds, SMART communication tools for driftwood sculpture.
- We were able to build international research collaborations, including with Filipino researchers studying overseas, to deliver more in depth studies that added validity and research capacity to the project.

### **Challenges**

- Because of the significant funds made available for mangrove planting activities run by the DENR post typhoon Haiyan, the POs began to expect payment in succeeding mangrove planting activities. This made our earlier policy of 'no pay planting' more challenging. Our strategy not to pay was built on the desire for communities to contribute their time to help restore their mangrove forests and invest in the survival of the seedlings. Where this strategy changed, we focused our advocacy and support around ensuring communities planted optimally and also understood and engaged in securing their mangrove forests.
- The POs became confused in what protocols they should follow for mangrove planting i.e. either the science-based protocols of ZSL (choice of appropriate species in the appropriate place at the appropriate time) vs DENR planting protocols (dominated by monoculture *Rhizophora*, planting on seagrass beds).
- Delays in project implementation due to political intervention of LGUs i.e. some MOAs took a while to be signed.

### **Are partners likely to keep in touch?**

- Yes, SEAFDEC scientists/technicians conduct regular monitoring activities of the seaweeds farms under their own budget but in collaboration with ZSL and local communities as needed.
- The partner LGUs continue to monitor activities of our POs on site as part of their local governmental responsibilities.
- BFAR listed the seaweed farmers as beneficiary to the 2017 materials distribution list of beneficiaries.
- POs continue to be contributors to the National Greening Programme.
- ZSL continues to build and run formal and informal collaborations with all partnerships (from community to academia to international agencies) developed during this project.

## 2 Project Achievements

### 2.1 Outputs

Output 1:	10 VSLAs implemented by year 2, and this number >doubled through the Village Agent model by year 3, increasing the financial security of villagers in four provinces (Bohol, Cebu, Iloilo, Capiz) and acting as a platform for community engagement in the management and protection of coastal ecosystems.		
	Baseline	Change recorded to project end	Source of evidence
Indicator 1. At least 10 VSLAs with 15-25 members established through People's Organisations or MPA management committees in project sites by year 1.	9 VSLAs formed with 207 HH members	25 VSLAs with 495 HH members (110 men : 366 women).	List of VSLAs showing membership (Appendix 16)
Indicator 2: At least 1 additional VSLA established in each of the 10 total sites through Village Agents by year 3, taking the total number of households engaged in VSLAs to at least 320	0 village agent	11 Village agents trained and functional	List of VSLAs/ agents/site (Appendix 17)
Indicator 3: Households involved in VSLAs see improvements in living conditions (measured through socioeconomic surveys as material style of life and locally defined wellbeing indicators that are identified by socioeconomic/wellbeing assessments) by year 3.	HH average monthly income is set at P2,500.00 (CBMS LGU data) = £38.50/month or £462 per year.	An additional P2,606 (£40) to P29,764 (£458) added per HH income over the project period (although this is an underestimate as only 4 of the 16 VSLAs had completed their end of cycle share out (completed each year) before the project end).  For the 3 VSLAs for which we have 3 years of data, average increase in income per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one	Table showing total savings of VSLAs per cycle (Appendix 18) and increase in income per household.



		cycle, an average increase of 28% (7 VSLAs).	
Indicator 4: Female household heads report reduced frequency in the use of food coping strategies, reflecting improved food security, by year 3.	Female HH with no gardens hence less food secured	Female HH with vegetable gardens to improve food security	Appendix 19. Community story on Basiao engaged in Bio-intensive gardening
Indicator 5: Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.	0 savings	An additional P2,606 (£40) to P29,764 (£458) added per HH income over the project period (although this is an underestimate as only 4 of the 16 VSLAs had completed their end of cycle share out (completed each year) before the project end).  For the 3 VSLAs for which we have 3 years of data, average increase in income per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one cycle, an average increase of 28% (7 VSLAs).	Table showing total savings of VSLAs per cycle (Appendix 18) and increase in income per household.
Indicator 6 Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.	No new enterprises	An average of P95,400 (£1,468) per VSLA (average membership = 15 so average of £98 per person – due to VSLA membership constraints this generally equates to a HH) investing in new enterprises from savings and loans	Appendix 20: CoMSCA (VSLA) data on usage of loans for investment into new enterprises
Output 2:	The Net-Works project is operating in at least 3 of the target villages in Bantayan (Cebu province) and Bohol, with villages feeding into the two sustainable business units (one in Bohol, one in Bantayan) that engage 20 communities		

	in collecting an average of 200kg of discarded fishing nets per month and per village by year 3; cleaning beaches, preventing ghost fishing, and providing sustainable income.		
Indicator 1. At least 11 tons of discarded nets collected from 5 villages annually and fed into global supply chain through Interface	Scoping done in 9 villages (Kodia, Marikaban, Malayuan, Pili, Agoho, Pawa, Balaring, Basiao, Cabugao)	Estimated 9,099 kilos of discarded nets for collection in 9 villages	Appendix 21. Scoping report
Indicator 2.100 households earning additional income from NetWorks in year 2 and 300 households earning additional income from year 2.	43 HH (Matabao, Inanoran, Batasan) earning additional income from net buying	A total of 439 HH (Matabao, Inanoran, Batasan, Pedada), composed of 6 CoMSCA groups and 1PO (BPFA) earning additional income from net buying	Appendix 22. Net-Works report
Indicator 3. Business model of Net-Works generates sufficient funds to support a local co-ordinator salary by Year 2.	0 funds	Volume of nets collected is not significant to generate income and support a local coordinator salary as self-sustaining business model	
Indicator 4. Annual coastal clean-up event implemented in 10 villages.	4 villages (all Darwin sites) participate in the International Coastal Clean-up 2,250 kilos of garbage collected	10 villages (7 Darwin sites, 3 non-Darwin sites) implements ICC 1,229.6 kilos of garbage collected	Appendix 23. Consolidated International Coastal Clean Up data
Output 3	Business models developed and implemented at buffer zone sites adjacent to mangrove MPAs that diversify community livelihoods and include income from seaweed farming, mussel culture, ranching sea cucumbers/abalone, and mangrove nurseries.		
Indicator 1. Feasibility study report of potential sustainable aquaculture ventures at each of the 10 project sites with community feedback by the end of Year 1.	Site assessment of ranching of sea cucumber  Technology verification of boneless anchovy (local	Site not feasible for sea cucumber ranching  Completion of the boneless anchovy	Appendix 24. Report of Doc Jon Altamirano, SEAFDEC  Appendix 25. Report of DGD on the first consultation done by Le Peralta

	name dilis) food production	(local name dilis) facility Trial run and initial shipment to Manila	Appendix 26. Picture of common working facility Appendix 51. Training delivered
Indicator 2. Seaweed farms and mussel farming re-established at sites damaged by earthquake/typhoon by the end of Year 1.	0 farmer engage in seaweeds farming in Pedada Seaweed trial farming involving 5 farmers Comparison of stake method vs raft method of oyster farming 60 oyster farms destroyed by typhoon Haiyan	Seaweeds farming/ production involving 13 farmers 21 oyster farmers provided with materials from Darwin project/adopting the raft method Additional 23 oyster farmers provided with rafts by the BFAR thru LGU Ivisan LGU zoning of mariculture area	Appendix 27. List of seaweeds farmers in Pedada and production record Appendix 28 Jo Ladja, SEAFDEC, assessment report Appendix 29. Map of LGU Ivisan zoning map for mariculture activities Appendix 30. List of oyster farmers provided with rafts by Darwin/BFAR Appendix 51. Training delivered
Indicator 3. Mangrove nurseries operational in at least 8 project sites by the end of Year 1 and supplying government agencies, NGOs and/or private companies by the end of Year 2.	Mangrove seedling production is engaged by BPF and Kodia Sold 70,991 seedlings (mixed species) to NGOs, LGUs	Total sales amounted to P578,912 (€8,906). Mangrove seedling production was temporarily stopped due to low seedling density (Pedada) and market demand (Kodia)	Appendix 31. Table showing total production of mangroves/beach forest seedlings for Kodia and BPF Appendix 51 and 51b. Training delivered
Indicator 4. Pilot studies completed (with biological and economic data recorded as part of local university student research projects) for three trials of grow-out of juvenile abalone and sea cucumbers supplied by SEAFDEC at 2 sites by the end of Year 3.	No pilot studies completed at project sites	Scientific assessment by collaborators at SEAFDEC identified that Darwin sites were not suitable for either abalone or sea cucumber culture to the proposed studies were not progressed. Student projects (national and international) were instead conducted on priority areas of research to guide and inform other aspects of the project.	Appendix 24 Assessment by SEAFDEC Annex 3 and Annex 6 of this report for student projects and resulting qualifications and publications
Indicator 5. Business plans in place for five livelihoods linked with coastal protection and	0 business plan	6 business plans in place (1 ecopark management, 2 mangrove/beach	Appendix 32. Business plans

sustainable marine resource use connected to an action plan for dissemination and replication by the end of Year 3.		forest seedling production, 1 driftwood sculpture, 1 dried deboned dilis production, 1 oyster farming)	
Output 4	>1,000 ha of mangrove, seagrass and coral reef habitats are effectively protected through MPA ordinances and community-based forest management agreements (CBFMAs) in four provinces (Bohol, Bantayan Island (Cebu province), Capiz, Iloilo) by year 3.		
Indicator 1.Two new MPAs that include mangroves with legal ordinances in place by the end of year 3 in Bantayan Island (Northern Cebu) and Capiz or Iloilo	0 MMPAs in Bantayan	2 new MMPAs established in Kodia, Madridejos (104.0 ha) and Obo-ob, Bantayan (116.4 ha) all in the province of Cebu with ordinances for protection	Appendix 33. MMPA maps of Kodia and Obo-ob
Indicator 2.MPA infrastructure restored (marker buoys, guardhouse, patrol boats, signage) in two villages in Bohol (Batasan, Matabao) by Year 1.	MMPA guardhouses, signages, bouys in Batasan and Matabao destroyed by earthquake	MMPA guard houses rebuilt, signages replaced, old patrol boats replaced with new ones	Appendix 34. Pictures of rebuilt guardhouses, patrol boats, buoys, signages
Indictor 3.CBFMAs in place for 3 villages in Capiz and Iloilo by Year 2 (Pedada, Balaring, Buntod) and underway in 3 further villages (provisionally Matabao, Bohol; Obo-ob, Bantayan; Basio, Capiz).	CBFMA applications submitted by 3 POs (BPFA, Buntod Katibyugan, NewBAMA) prior to Darwin project	We were informed that currently all CBFMA applications have been put on hold by the DENR while they review their policies and tenurial instruments. However, on May 22 <sup>nd</sup> 2017 we received notification that the Balaring CBFMA application was approved and proceeding for final signature. This will provide the PO of Balaring (NewBAMA) with 25 year tenurial rights over their mangrove forest.  2 Protected Area Community Based Resource Management Programme (PACBARMA)	Appendix 35.Copy of PACBARMA applications.  Appendix 36. CBFMA approval for NewBAMA in Balaring.

		applications of POs in Kodia and Obo-ob were submitted to DENR 7, but were also placed on hold as DENR is undergoing review of tenurial instruments	
Indicator 4. Two MPAs in Bohol (Batasan, Matabao) expanded in area by the end of Year 3 supported by a local ordinance.	2 MMPAs (Batasan and Matabao) having an area of 73.6 ha of corals only	2 MMPAs (Batasan and Matabao) was expanded to 283.53 ha to include mangroves and seagrasses	Appendix 37. MMPA maps of Batasan and Matabao before and after expansion
Indicator 5. Area of mangrove replanted using ZSL's science-based methodology (Primavera et al., 2013) in 10 project sites by the end of Year 3	5.12 ha available for planting in Buntod, Pedada and Balaring	5.12 ha planted/maintained in Buntod, Pedada and Balaring and 4 ha additional site planted in Oboob, Bantayan  0.167ha in Oboob, Bantayan-planted  Pedada back of breakwater planting- 0.39 plantable, 0.2 ha planted	Appendix 38. Maps identifying that can be planted with mangroves
Indicator 6. Project site maps showing area of mangrove, seagrass and coral reef under protection by Year 3.	1 MMPA protected by local ordinance (Ivisan)	5 MMPAs all with local ordinances for protection	Appendix 3. MMPA ordinances (Ivisan, Matabao, Batasan, Kodia, Oboob)
Output 5.	10 mangrove MPAs and community-based mangrove forest management plans are being implemented by year 2 from a baseline of 0, with MPAs enforced by 20 legally deputised fish and forest wardens, rated between Levels 3-5 under the national MPA Rating System (MEAT).		
Indicator 1. MPA and mangrove forest management plans for all sites by Year 3	2 MPA Management plans (Batasan and Matabao) in place	4 MMPA mgt plans (Batasan, Matabao, Kodia, Oboob)  Ivisan mangrove plans integrated in the CRM plan of Ivisan	Appendix 39. MMPA mgt plans of Batasan, Matabao, Kodia and Oboob  Appendix 40. Ivisan CRM plan
Indicator 2. Project sites featured in relevant local government Coastal	Ivisan CRM plan	Draft CRM plan of Madrideojos, Cebu for Kodia	Appendix 40. Ivisan CRM plan  Appendix 41. Draft CRM Plan of

Resource Management Plans by Year 3		Legislated/ implemented CRM plan of Ivisan  Report of PCRA data gathering for Ajuy in preparation for CRM plan	Madridejos, Cebu for Kodia  Appendix 42. PCRA report for Ajuy (includes Pedada)
Indicator 3. Deputised fish and forest wardens by Year 3	10 BD trained in Ivisan  Functional FW in Tubigon	10 FW sustained in Ivisan  21 BG trained and deputized in Panay Darwin sites  4 FW trained and deputized in Oboob, Bantayan and 7 FW trained and deputized in Kodia, Madridejos	Appendix 43. List of Fish Wardens in Ivisan, Tubigon, Kodia and Oboob  Appendix 44. Deputation letter from DENR 6
Indicator 4. Number of patrols, apprehensions and fines conducted by fish and forest wardens documented by Year 3	Initial documentation of apprehensions	19 Apprehensions in Tubigon  18 apprehensions done in Ivisan  Year 3 data for Ivisan  Bantayan sites have just finished their fish warden training and has started implementing patrol operations	Appendix 45. Summary of apprehensions
Indicator 5. Species and habitat survey data reported annually	Baseline biological data gathered and reported in 2013 and 2014.	A total of 6 biological survey reports were produced from 2014-2016 covering sites Panay and Bantayan-Tubigon	Appendix 46a. Biological survey report for Ivisan  Appendix 46b. Biological survey report for Bantayan, Cebu and Tubigon, Bohol  Appendix 46c. Mangrove Community Structure Survey Report – Pedada, Balaring, and Buntod
Indicator 6. Open access database of 14 years of MPA monitoring data online by the end of Year 2	Biological data in MS Excel format	Batasan, Matabao, Oboob, MMPAs updated in the MPA Support Network website; Ivisan MPA in the process of updating  MS Open Access database created for all sites: Ivisan - 8	<a href="https://database.mpa.supportnetwork.org/">https://database.mpa.supportnetwork.org/</a>

		years mangrove data, 4 years seagrass, corals and fish; Pedada – 7 years mangrove data; Buntod – 7 years mangrove data; Batasan – 17 years corals and fish data, 3 years mangroves and seagrass; Matabao – 15 years corals and fish data, 3 years mangrove and seagrass 2011; Obo-ob – 3 years data; Kodia – 3 years data	Appendix 47. Access database of biological data for all sites. This will be made freely available to researchers interested in using the data
Indicator 7. MEAT rating generated annually	Ivisan baseline MEAT 2014 rating	2017 MEAT rating for Ivisan 2015 MEAT ratings for Batasan and Matabao 2016 MEAT for Matabao MPA	Appendix 48. MEAT rating for Matabao Appendix 49. MEAT rating for Batasan Appendix 50. MEAT rating for Ivisan
Output 6.	Side event at CBD SBSTTAs and/or COP and presentation at the 2014 IUCN World Parks Congress provide the forum for dissemination, that result in stakeholder cross-visits and training sessions to replicate the approach in 1 DFID priority countries with mangroves.		
Project information presented at CBD SBSTTA and/or COP by Year 3	None	Not achieved	
Project presented at 2014 IUCN World Parks Congress by Year 1	None	Our presentation proposals were accepted for the World Parks Congress in 2014. The Net-Works film featuring the Darwin project was shown on Saturday 15th November 2014 at the IUCN World Parks Congress in Sydney. On Monday 17 November 2014, a Stream 4 presentation by Dr Nick Hill (co-authored by Heather Koldewey and Jurgene Primavera) entitled 'Building resilience through recovery: mangroves	<a href="http://www.worldparkcongress.org/">http://www.worldparkcongress.org/</a>

		<p>and MPAs in the Philippines' showcased the Darwin project. Nick also presented an e-poster and speed presentation on 'Net-Works: from fishing nets to carpet tiles' in the same Stream 4. The presentations were well attended and received many questions.</p> <p>A proposal was submitted and accepted by the World Parks Congress (12th-29th November 2014, Sydney Australia) and Dr Nick Hill from the Darwin team delivered a presentation within the 'Ecosystem restoration and protected areas: delivering socio-economic and environmental benefits' session.</p> <p>Direct interventions from the Darwin project team resulted in the inclusion of mangroves in the output strategy from the WPC Marine Theme, which were absent from the initial draft wording.</p>	<p><a href="https://www.zsl.org/sites/default/files/medias/2014-11/IUCNWorldParksCongress2014statement_IUCN%20Mangrove%20Specialist%20Group_numerical%20target.pdf">https://www.zsl.org/sites/default/files/medias/2014-11/IUCNWorldParksCongress2014statement_IUCN%20Mangrove%20Specialist%20Group_numerical%20target.pdf</a></p>
<p>One stakeholder cross-visit and training session in 1 DFID priority country with mangroves by Year 3.</p>	<p>None in place</p>	<p>We hosted stakeholder cross-visits and training sessions with colleagues from Costa Rica and Viet Nam.</p> <p>We built collaborations and joint training with the regional offices of international donor/implementing agencies GIZ, RARE and CORDAID.</p> <p>Heather Koldewey and Jurgenne Primavera shared project examples at an international symposium they co-organised 'Turning the tide on mangrove loss' international symposium between IUCN Mangrove</p>	<p>Appendix 4.</p> <p>Annex 5 publications.</p>



		<p>Specialist Group, ZSL and Xiamen University, China in November 2015.</p> <p>Dialogue held with contacts in Bangladesh (University of Dhaka), but due to political instability was unable to progress.</p> <p>The Net-Works team delivered a cross visit to our Darwin project in Mozambique in 2016 and conducted training on MPA establishment and management.</p> <p>A scoping visit to Thailand, Indonesia and Myanmar in 2016 was conducted to explore the potential for mangrove project and Net-Works replication. As a result, Net-Works replication is underway in Indonesia.</p>	Appendix 55. Net-Works expansion in Indonesia with Sea-Net
	Baseline	Change recorded to project end	Source of evidence

## 2.2 Outcome

Outcome:	1,000ha of coastal habitats across four provinces in the Philippines are effectively protected and sustainably managed by communities, reversing declining trends in local fisheries, increasing food security and diversifying livelihoods.			Comments (if necessary)
	<b>Baseline</b>	<b>Change by 2017</b>	<b>Source of evidence</b>	
<b>Indicator 0.1</b> At least 200 ha of mangroves, seagrasses and coral reefs are protected in two new MPAs (Bantayan (Cebu province), Iloilo/Capiz) and at least 800 ha are protected through restoring and strengthening two existing	<p>3 MMPAs with a total area of 1702 has of mangroves, seagrasses and coral reefs are protected in Ivisan, Matabao and Batasan</p> <p>168.93 hectares of mangroves included in MMPAs</p> <p>3 CBFMAs submitted but put</p>	<p>2 New MMPAs established in Oboob, Bantayan and Kodia Madrudejos with a total area of 220.5 has making a total of 2,110.5 has (including expansion of Batasan MMPA from 21 to 209 has)</p> <p>266 has of mangroves</p>	<p>Appendix 3. MMPA ordinances</p> <p>Appendix 33 and 36. Maps of MMPAs</p> <p>Appendix 35. PACBARMA application and Appendix 36. CBFMA approval for NewBAMA</p>	The government put on hold the CBFMA system (although surprisingly in May 2017 then wrote to endorse the CBFMA for New BAMA in Balaring). The PACBARMA process was implemented

<p>MPAs and six mangrove forest sites in four provinces (Bohol, Northern Cebu, Capiz, Iloilo), including using government tenurial instruments (Community-based Forest Management Agreements; CBFMAs), making a total of 1,000 ha effectively protected by year 3 from a baseline of 60 ha.1</p>	<p>on hold by DENR 6 (instrument undergoing review)</p>	<p>included in the MMPAs 2 Protected Area Community Based Resource Management Programme (PACBARMAs) submitted to DENR 7 (instrument undergoing review)</p>		<p>during the project period by national government, but is also under review. This has meant finalising these tenurial instruments during the project period has been challenging. However, the principles, training and relevant paperwork have been completed with engaged communities.</p>
<p><b>Indicator 2.</b> Current declines in fish biomass and habitat cover for corals and mangroves within new and existing MPAs will be halted or reversed by year 3.</p>	<ul style="list-style-type: none"> <li>• <i>Fish biomass</i> Ivisan: 10.66 t/km<sup>2</sup> Batasan: Inside MPA 45.06 t/km<sup>2</sup>; Outside MPA 1.80 t/km<sup>2</sup> Matabao: Inside MPA 11.21 t/km<sup>2</sup>; Outside MPA 1.95 t/km<sup>2</sup> Oboob – Inside MPA 5.861 t/km<sup>2</sup>; Outside MPA 2.22 t/km<sup>2</sup> Kodia – Inside MPA 6.58 t/km<sup>2</sup>; Outside MPA 3.86 t/km<sup>2</sup></li> <li>• <i>Fish density</i> Ivisan – 258.5 individuals/250m<sup>2</sup> Batasan – Inside MPA 361 individuals/250m<sup>2</sup>; Outside MPA 405.25 individuals/250m<sup>2</sup> Matabao – Inside MPA 295.5</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Fish biomass</i> Ivisan: 15.58 t/km<sup>2</sup> Batasan: Inside MPA 11.87 t/km<sup>2</sup>; Outside MPA 2.62 t/km<sup>2</sup> Matabao: Inside MPA 1.89 t/km<sup>2</sup>; Outside MPA 1.65 t/km<sup>2</sup> Oboob – Inside MPA 12.97 t/km<sup>2</sup>; Outside MPA 4.34 t/km<sup>2</sup> Kodia – Inside MPA 0.93 t/km<sup>2</sup>; Outside MPA 0.82 t/km<sup>2</sup></li> <li>• <i>Fish Density</i> Ivisan – 253.3 individuals/250m<sup>2</sup> Batasan – Inside MPA 148.25 individuals/250m<sup>2</sup>; Outside MPA 108.5 individuals/250m<sup>2</sup> Matabao – Inside MPA 94.0</li> </ul>	<p>Appendix 46a. Biological Survey Report – Ivisan Fish Sanctuary and Reserve Appendix 46b. Biological Survey Report – Bantayan Island, Cebu and Tubigon, Bohol Appendix 46c. Mangrove Community Structure Survey Report – Pedada, Balaring, and Buntod</p>	<p>Among the sites, only IFSR has observable increase in fish biomass. Batasan and Matabao corals and fish populations were in poor conditions as a probable effect of the impacts of the earthquake back in 2013. While destructive fishing aggravated by Typhoon Haiyan contributed to poor coral reef and fish population. Mangrove densities are greatly affected by varying seedling densities.</p>

	<p>individuals/250m<sup>2</sup> ; Outside MPA 193.5 individuals/250m<sup>2</sup></p> <p>Oboob – Inside MPA 302.75 individuals/250m<sup>2</sup> ; Outside MPA 212.0 individuals/250m<sup>2</sup></p> <p>Kodia – Inside MPA 127.25 individuals/250m<sup>2</sup> ; Outside MPA 151.0 individuals/250m<sup>2</sup></p> <ul style="list-style-type: none"> <li>• <i>Mangrove density</i></li> </ul> <p>Ivisan (Balaring) – 50,860 stems/ha (overall, 2009); 1,870 stems/ha (trees)</p> <p>Ivisan (Agustin Navarra) – 36,180 stems/ha (overall); 2,080 stems/ha (trees)</p> <p>Pedada - 12,040 stems/ha (overall, 2009); 520 stems/ha (trees)</p> <p>Buntod - 4,800 stems/ha (overall, 2009); 2,340 stems/ha (trees)</p> <p>Batasan – 6,100 stems/ha (overall)</p> <p>Matabao – 4,600 stems/ha (overall)</p> <p>Oboob -16, 413 stems/ha (overall)</p> <p>Kodia – 8, 215 stems/ha (overall)</p> <ul style="list-style-type: none"> <li>• <i>Seagrass Cover</i></li> </ul> <p>Ivisan – 30.7%</p> <p>Batasan – 33.8%</p> <p>Matabao – 2.5%</p> <p>Oboob – 47.7%</p> <p>Kodia – 22.7%</p>	<p>individuals/250m<sup>2</sup> ; Outside MPA 108.0 individuals/250m<sup>2</sup></p> <p>Oboob – Inside MPA 212.75 individuals/250m<sup>2</sup> ; Outside MPA 211.75 individuals/250m<sup>2</sup></p> <p>Kodia – Inside MPA 40.25 individuals/250m<sup>2</sup> ; Outside MPA 44.75 individuals/250m<sup>2</sup></p> <ul style="list-style-type: none"> <li>• <i>Mangrove density</i></li> </ul> <p>Ivisan (Balaring) – 31,600 stems/ha (overall); 3,025 stems/ha (trees)</p> <p>Ivisan (Agustin Navarra) – 27,857 stems/ha (overall); 1,775 stems/ha (trees)</p> <p>Pedada - 5,650 stems/ha (overall); 1,230 stems/ha (trees)</p> <p>Buntod - 16,100 stems/ha (overall); 1,950 stems/ha (trees)</p> <p>Batasan – 4,117 stems/ha (overall)</p> <p>Matabao – 6,500 stems/ha (overall)</p> <p>Oboob – 21,119 stems/ha (overall)</p> <p>Kodia – 8,823 stems/ha (overall)</p> <ul style="list-style-type: none"> <li>• <i>Seagrass Cover</i></li> </ul> <p>Ivisan – 68.3%</p> <p>Batasan – 65.7%</p> <p>Matabao – 7.0%</p> <p>Oboob – 32.3%</p> <p>Kodia – 67.6%</p>		<p>However, it is noted that there is general increase in tree density.</p> <p>Overall increase in seagrass cover was noted in all sites, except Oboob (newest MPA).</p>
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	<ul style="list-style-type: none"> <li>• <i>Coral Cover</i> Ivisan – 20.14% Batasan – Inside MPA 23.40%; Outside MPA 14.36% Matabao – Inside MPA 3.89%; Outside MPA 3.11% Oboob – Inside MPA 27.41%; Outside MPA 11.85% Kodia – Inside MPA 9.48%; Outside MPA 4.11%</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Coral Cover</i> Ivisan – 22.67% Batasan – Inside MPA 21.83%; Outside MPA 19.32% Matabao – Inside MPA 1.6%; Outside MPA 4.50% Oboob – Inside MPA 5.5%; Outside MPA 3.28% Kodia – Inside MPA 11.41%; Outside MPA 12.05%</li> </ul>		
<p><b>Indicator 3.</b> Set baselines in year 1 through household baseline surveys and achieve an average of at least 20% improvement in locally-defined wellbeing scores and material style of life indices for 2,000 households within the 10 target villages by year 3. Wellbeing will be assessed using subjective quality of life approaches applied to fisheries and quantitative indicators (e.g. the proportion of households with tin roofs).</p>	<p>HH income pegged at P2,500/month (£38.5) (CBMS data of LGUs)</p>	<p>An additional P2,606 (£40) to P29,764 (£458) added per HH income over the project period (although this is an underestimate as only 4 of the 17 VSLAs had completed their end of cycle share out (completed each year) before the project end).</p> <p>For the 3 VSLAs for which we have 3 years of data, average increase in income per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs)</p>	<p>Appendix 18. Record of share out and average share received by members</p>	<p>We did not do well at monitoring wellbeing scores due to lack of socioeconomic research capacity within the Philippines team and using other indicators relating to the performance of VSLAs and access to livelihoods.</p>

		and for those who had completed one cycle, an average increase of 28% (7 VSLAs).		
<b>Indicator 4.</b> Number of households in VSLAs increases from 100 at project start to 320 by year 3, with an average of £20 each in savings (based on experience in Bohol).	9 VSLAs formed with 207 HH 6 Village agents trained	25 VSLAs formed with 495 HH members  There are 130 male and 382 females in the VSLAs  A total of 15 Village agents trained and functional  For the 3 VSLAs for which we have 3 years of data, average increase in savings per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one cycle, an average increase of 28% (7 VSLAs).	Appendix 16. List of VSLA members.  Appendix 17. List of Village Agents per site.  Appendix 18. Record of share out and average share received by members	VSLAs work on a one year cycle, so the total savings for the final year is missing from the final reporting as the share out date takes place after the end of the project reporting period. This means that the level of savings is likely to be underreported.
<b>Indicator 5.</b> Communities assessed and where feasible, linked up to Net-Works business model which involves collecting an average of 200kg of nets per month per site for recycling	2 villages Inanoran, Matabao and Batasan (all in the municipality of Tubigon) are operating with nets feeding into the business unit in Bohol.	4 villages are operating with nets feeding into the business unit in Bohol, Bantayan and Iloilo. A total of 354 households are earning additional income from net-buying surpassing the	Appendix 21. Net-Works scoping reports.  Appendix 22. Summary of Net-Works collection at project sites in kg.	The discarded nets in the Tubigon sites and Ajuy have fed in to the Net-Works business model and used existing collection centres in northern Iloilo and Bantayan

<p>(equivalent to £560 per village per year in communities where average household income is ~£110 per month) by year 3.</p>		<p>target of 300 households.</p> <p>Total volume of nets collected in all sites = 582.8 kilos.</p>		<p>Islands. Students from nearby school of Northern Iloilo Polytechnic State College provided assistance in net collection especially in the nearby villages of Pili, Malayuan, Nasidman all in the municipality of Ajuy.</p>
<p><b>Indicator 6.</b> All 10 communities have diversified livelihoods to include sustainable enterprises (e.g. Net-Works, aquaculture, mangrove enterprises) with an increase from an average of 2 to 2.5 livelihoods across the 2000 households in the target villages by year 3.</p>	<p>2 communities (BPFA, Buntod Katibyugan) have diversified livelihoods that included mangrove seedling production and Oboob and Pedada had an existing mangrove ecopark (though both heavily damaged by Typhoon Haiyan and Pedada was not operational)</p>	<p>Livelihoods were diversified to include the following in 8 communities benefitting 703 households:</p> <ol style="list-style-type: none"> <li>1. Ecopark management for Oboob and Pedada</li> <li>2. Oyster farming in Basiao and Buntod</li> <li>3. Driftwood sculpture in Buntod</li> <li>4. Mangrove/ Beach forest seedling production in Pedada and Kodia</li> <li>5. Net-Works in Matabao, Batasan and Pedada.</li> <li>6. Boneless dilis in Basiao and Balaring.</li> <li>5. Bee keeping for honey production in Pedada.</li> </ol>	<p>Appendix 13. Income from livelihoods.</p> <p>Appendix 25. Improved deboning technology for boneless dilis.</p> <p>Appendix 26. Common working facility.</p> <p>Appendix 27. List of seaweed farmers.</p> <p>Appendix 30. List of oyster farmers.</p> <p>Appendix 31. Sales of mangroves and beach forests.</p> <p>Appendix 22. Net sales.</p> <p>Appendix 32. Business plans.</p> <p>Appendix 49: Summary/report of income/sales from livelihoods</p> <p>Appendix 51. Training delivered</p>	<p>The additional focus of livelihoods in Pedada was due to some challenges in the mangrove nursery market (changing markets, over harvest).</p>

		6. Seaweed farming in Pedada.  7. Net-Works net collection in Batasan, Inanoran, Matabao and Pedada		
<b>Indicator 7. 4</b> project MPAs are independently scored from Level 3 (Sustained) to Level 4 (Institutionalized ) under the National MPA Effectiveness Assessment Tool (MEAT) for effective management and enforcement by year 3 (none scored prior to project).	Level 1 (established) rating for Matabao and no MEAT ratings for the other MPAs.	Level 1 (established) MEAT rating for Matabao, did not qualify for being Level 2 (strengthened) by 3 points due to the lack of cases around violations.  Level 1 (established) MEAT rating for Ivisan, missing qualifying by 1 point for the next level 'strengthened' due to the lack of a formal enforcement plan.  Level 1 (established) MEAT rating for Batasan, did not qualify for being Level 2 (strengthened) by 3 points due to the lack of patrolling, participatory monitoring and an education plan.  Level 1 (established) MEAT ratings for Kodia and Level 1 (established) MEAT rating for Oboob	Appendix 47. MEAT assessment for Ivisan.  Appendix 48. MEAT assessment for Matabao.  Appendix 50. MEAT assessment for Batasan.	Level 3 can only be applied when the MPA is 5 years old and Level 4 when the MPA is 7 years old. The earthquake and typhoon undoubtedly undermined some of the MPAs, damaging infrastructure and reducing resources for patrolling etc. This project has re-established the legal frameworks, the management organisations and capacity and the infrastructure. Enforcement capacity has been increased by training and designation of fish wardens, however this is an area that needs further attention as enforcement capacity is generally low and poaching pressure high.
<b>Indicator 8.</b> This Philippines model	0 replication site	Cross visits with training were	Appendix 55. Net-Works	Replication takes time to

for sustainable community-based MPAs that encompass mangrove habitats is replicated in at least 1 site in the Philippines and in at least 1 DFID priority countries by the end of Year 3 through invited cross-visits with project		achieved by hosting partners from Costa Rica and Viet Nam.  ZSL team members conducted scoping visits and partner meetings in China, Mozambique, Myanmar, Thailand and Indonesia. A replication project for Net-Works is now underway in Indonesia.	expansion in Indonesia with Sea-Net	build relationships and assess potential, and to raise funds to support such replication. In hindsight this was an overambitious target.
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### 2.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

**Impact statement from logframe:** Community-based marine protection in the Philippines contributes to disaster recovery and resilience to natural disasters while helping meet national and international targets (10% by 2020) through habitat and livelihoods diversification.

Darwin projects are asked to contribute to a higher level impact of biodiversity conservation and poverty alleviation.

- What Impact was in your agreed application form?

1,000ha of coastal habitats across four provinces in the Philippines are effectively protected and sustainably managed by communities, reversing declining trends in local fisheries, increasing food security and diversifying livelihoods.

- What contribution did your project make to this higher-level impact? Please present comments substantiated by evidence.

A total of 2,111.43 hectares of MMPAs was established by the Darwin project in the four provinces of Bohol, Cebu, Capiz and Iloilo specifically in Batasan island, Matabao, Ivisan, Oboob and Kodia. The biggest MMPA is in Ivisan which measures 1,628.40 ha while the smallest is the Kodia MMPA with 104 ha. Details of the size, no take zone and mangrove areas are provided in the table below.

MPA	Batasan Marine Sanctuary	Matabao Fish Sanctuary	Ivisan Marine sanctuary and Fisheries Reserve	Oboob MPA	Kodia MPA	Total
<b>Total area</b>	209.93 ha	52.60 ha	1628.40 ha	116.50 ha	104.00 ha	2,111.43 ha
<b>No-take</b>	19.53 ha	52.60 ha	149.32 ha	20.38 ha	16.17 ha	257.99 ha
<b>Mangrove</b>	57.47 ha	25.89 ha	95.66 ha	84.12 ha	13.07 ha	276.21 ha



MMPA management councils have been established at all MMPA sites with capacity building activities such as training on MPA management and Participatory Monitoring Survey Method (Appendix 50). Among the sites, only IFSR has observable increase in fish biomass during the project period, while Batasan and Matabao corals and fish populations were in poor condition as a probable effect of the impacts of the earthquake back in 2013 and the increased fishing pressure that followed (Appendix 46a, 46b). Mangrove densities are influenced by the variation in seedling densities, but with an overall increase in tree density (Appendix 46c). There was also an overall increase in seagrass cover in all sites Appendix 46a, 46b). All the MMPAs are protected by ordinances (Appendix 3) and fish wardens (Bantay Dagats) (Appendix 44) conduct patrol operations to apprehend violators in the MMPA (Appendix 45).

- **Protection from natural disasters.** Better protection and rehabilitation of mangrove forests helps protect communities from the increasing frequency and severity of natural disasters, particularly typhoons and associated storm surges. In recent decades, natural disasters have resulted in financial and human losses of roughly USD\$300 million and 850 lives per year (World Bank/NDCC, 2004). Typhoon Haiyan claimed >5,000 lives. Mangroves are proven to increase protection from typhoons and associated storm surges, and the mortality of intact forests was relatively low, even in areas with the highest typhoon impact (Long et al., 2016; Primavera et al., 2016 – both publications produced in association with this Darwin project; Annex 5). Our training courses (Appendix 51b) and manuals (Annex 5) are all targeted to increase the scale and success of protection from natural disasters through more effective and resilient coastal greenbelts.
- **Ensure food security for coastal communities** – restoration and conservation of mangrove forests, seagrasses and coral reefs help to support local fish-stocks – a vital protein source on which all of our focal communities are dependent. This was demonstrated through the recovery of the habitats (most notably mangroves and seagrasses) within the MPAs (Appendix 46a, 46b, 46c) and the increase in fish biomass in the Ivisan MPA (Appendix 46a).
- **Increase agricultural productivity** – In a previous project, we constructed a breakwater in Pedada to facilitate the recovery of mangrove forests which has shown that successful rehabilitation can help prevent erosion of agricultural lands and saline inundations (Primavera et al., in prep but included in the presentations listed in Annex 3).
- **VSLAs and diversified livelihoods** – VSLAs improve the capacity of households to manage income, particularly helping in times of need. Furthermore, 77% of VSLA members associated with this project are women (Appendix 16), leading to gender empowerment and reaching the most vulnerable community members. For the 3 VSLAs for which we have 3 years of data, average increase in income per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one cycle, an average increase of 28% (7 VSLAs) (Appendix 18). Livelihood diversification reduces dependence on fish stocks and increases food security and we were able to diversify 6 livelihoods in 8 communities benefiting 703 households, providing training to 150 men and 235 women (Appendix 51).
- **Climate change mitigation** - Mangroves provide vital climate change mitigation and adaptation ecosystem services, yet have suffered extensive tropics-wide declines. To mitigate losses, rehabilitation is high on the conservation agenda. We used our Darwin project work as a case study, using field- and satellite-derived methods, to assess carbon stocks and coastal protection potential of rehabilitated low-intertidal seafront and mid- to upper-intertidal abandoned (leased) fishpond areas, against reference natural mangroves. Due to large sizes and appropriate site conditions, targeted abandoned fishpond reversion to former mangrove was found to be favourable for enhancing climate change mitigation and adaptation in the coastal zone. In a municipality-specific case study, 96.7% of abandoned fishponds with high potential for effective greenbelt rehabilitation had favourable tenure status for reversion. These findings were published

in the peer reviewed literature (Duncan et al., 2016, Annex 5) and feedback sessions delivered to communities and local government units in Panay.

### **3 Contribution to Darwin Initiative Programme Objectives**

#### **3.1 Contribution to Global Goals for Sustainable Development (SDGs)**

Our contribution to the Philippines' achievement of the following Sustainable Development Goals are as follows:

- 1: Ending poverty – through access to financial services through VSLAs and resulting savings.
- 2: End hunger – diversified livelihoods that increase access to food and income and build resilience.
- 5: Gender equality - 77% of VSLA members are women, increasing gender equity in the focal coastal communities targeted in this project.
- 6: Sustainable economic growth – using the Net-Works sustainable business model and business planning for sustainable diversified livelihoods.
- 11: Make cities and human settlements sustainable and resilient – through building coastal protection and environmental resilience through MPAs that include mangroves, seagrasses and coral reefs.
- 12: Sustainable production and consumption patterns – the project delivered Coastal Resource Management Plans with communities and local government as well as MPAs that are part of a strategy for fisheries management and sustainable use of marine resources.
- 13: Climate change – mangroves and seagrasses are important for carbon storage and reducing impact of climate change through the ecosystem services they provide e.g. wave attenuation (Duncan et al., 2016 – a research publication from this project).
- 14: Conserve and sustainably use oceans – through training programmes in mangroves and beach forest conservation, appropriate diversified livelihoods as well as in MPA establishment.
- 15: Conserve and sustainably use forests – including mangroves in MPAs, increasing attention and protection on beach forests, development of CBFMAs and PACBARMAs that increase tenurial rights of local communities to protect coastal forests.

#### **3.2 Project support to the Conventions or Treaties (CBD, CMS, CITES, Nagoya Protocol, ITPGRFA)**

- The mangrove and beach forest training programmes and associated materials (including manuals) helped contribute to biodiversity awareness of relevant stakeholders (Aichi Target 1).
- The contribution of biological data collected through this project to the national MPA database and MPA Effectiveness Assessment Tool monitoring has supported national systems of accounting for biodiversity (Aichi Target 2) as well as the 10% marine protection target of the CBD.
- Protection of mangroves, seagrasses and coral reefs in MPAs, as well as through tenurial systems (Community Based Forest Management Agreements) has helped reduce the rate of loss of natural habitats (Aichi Target 5).
- The MPAs established and strengthened during this project, including the training and deputation of fish wardens help avoid overfishing and recover fish stocks. The contribution of the project to Coastal Resource Management Plans with local governments has also adopted a wider planning approach to management and recovery of marine resources (Aichi Target 6).
- Our strategy of integrating mangroves and seagrasses into MPAs and increasing their size, particularly in areas prone to natural disasters, has helped build resilience to climate change. (Aichi Target 10).
- Our approach to engage local government units and communities in MPA management, with the ecosystem approach to design and designation of MPAs, has contributed to 10% protection targets through equitable and ecologically representative approaches. (Aichi Target 11).
- Our strategy to use VSLAs (locally called Community Managed Savings and Credit Associations, CoMSCAs) as part of our conservation interventions builds gender equity and contributes to health, livelihoods and wellbeing. Our innovation to introduce an

environment fund into the savings groups further integrates ecosystem conservation with human needs (Aichi Target 14).

- Our research conducted in conjunction with this project has documented the ecosystem service value of protecting and restoring mangrove forests (in terms of carbon stored and storm wave attenuation). Our Community Based Forest Management Agreements and Protected Area Community Based Resource Management Programme submissions provide the tenurial rights for communities to protect and restore their mangrove forests over a 25 year period (Aichi Target 15).
- We published 5 peer reviewed publications, 1 identification guide, 1 conference proceedings, 2 manuals, as well as science-based posters, leaflets and other outreach materials. We contributed data to the national database on MPAs and used the national standard for MPA Effectiveness Assessment.

This project team also helped contribute to the development of, and subsequent contributions to, the following components of the Philippine Biodiversity Strategy and Action Plan 2014-2025 in contribution to achieving the Aichi Biodiversity Targets:

- Terrestrial Ecosystems, Priority Strategy 1- Protect and conserve existing natural habitats and pursue restoration of the functionality of degraded habitats (supporting Aichi Targets (AT) 1, 2,5,11,14,15,19)
- Terrestrial Ecosystems, Priority Strategy 3 – Conserve and protect natural ecosystems to improve the resilience of vulnerable communities (supporting AT 1,2,15,19)
- Aquatic Ecosystems (Freshwater/Marine), Priority Strategy 5- Implement habitat rehabilitation programs and strengthen collaboration among relevant agencies and stakeholders on land and water use, resource extraction, ecosystem restoration, law enforcement and sustainable livelihoods (supporting AT 1, 2, 5,6,10,11,15).

### **3.3 Project support to poverty alleviation**

Six communities, Basiao and Balaring in Ivisan, Buntod in Panay, Pedada in Ajuy, Kodia and Oboob in Bantayan island, Cebu are implementing income generating projects, with only Net-Works plus an initial livelihoods inventory implemented in the counterpart sites in Bohol.

There were 57 types of trainings conducted over the 3 years of the Darwin project that included leadership formation, financial systems management, technical trainings on MMPAs and livelihoods skills training that benefitted 1,254 individuals, 482 are males and 770 females. Training and support for VSLAs (CoMSCAs) was also a core part of the support that the project team provided, including the transition of this support being provided by our team to the Village Agents selected and trained through this project (Appendix 17). There were 21 trainings geared towards getting more knowledge and skills on income generating projects such as oyster farming, driftwood sculpture, fish processing, seaweeds farming, beekeeping, mangrove/beachforest seedling production (Appendix 51). From these livelihood trainings, 703 households benefitted through providing training to 150 men and 235 women.

Income from livelihoods such as oyster farming, using the raft method (P55,755; £858), from fish processing (P41,320; £636), driftwood sculpture (P69,327; £1,067), mangrove seedling production (P578,912; £8,906), seaweeds farming (P46,494; £715), ecopark management, entrance fees, donations and associated food business (P224,964; £3,461) and Net-Works net collection (P27,366; £421). Further analysis on household changes and diversification strategies and how those link to wellbeing are underway and will be a follow up output relating to this project.

The income earned from group activities is divided equally among members who are involved such as mangrove seedling production, ecopark management and fish processing. Individual income is directly received by those engaged in oyster farming, driftwood sculpture, seaweed farming and net collection. The VSLAs receive additional income through consolidating and selling the nets into the global supply chain. Income from this is divided among VSLA members during times of share out.

The VSLA is a self-help savings group lodged in the villages where members are taught the value of savings. It operates like a mini bank where members can loan the savings generated and also build an insurance fund. To date 25 VSLAs were formed as part of this

project, generating savings, offering loans to members, and helping in times of bereavement, sickness and the like to its members through access to the social fund. VSLAs answer the limitation of member's access to credit. The limitation on initial capital needed by the boneless dilis to buy fish for deboning/drying and the money for permits and licenses needed by the oyster farmers is likewise being answered by infusing small amounts of money in the VSLAs that the members can borrow and pay at an agreed timeframe. As reported earlier, the average increase in income per VSLA member is at least 22% per annum (Appendix 18).

### **3.4 Gender equality**

The total membership of the People's Organizations reached 696 and from this number 340 (49%) are men and 356 (51%) are women. The difference is not huge signifying that more women are recognized to become members of fishers groups formerly dominated by men. It is important to note however that women (58%) occupies more leadership positions than men (41%) (Appendix 53). The VSLA groups have more women members than men, 366 (77%) vs 110 (23%) (Appendix 16). This scenario proves the fact and in the Philippines setting women are entrusted by men in keeping the money. The behaviour of society where production work was used to be dominated by men slowly changed where women are now recognized capable of doing work outside of the home to earn income.

Several impacts were felt when the issue of gender equality was taken into consideration in the Darwin project implementation such as: opportunities is equally provided to both men and women, an improved recognition of women's participation in governance, organizational participation and community decision making processes were observed to be positive for women, women's capacities were improved and a recognition of the value that women contributed to production work which was before generally dominated by men.

### **3.5 Programme indicators**

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Yes, MPA Management Councils (MMC) are composed of members from the Peoples Organisations and the village councils in all sites. The MMC is the management body that manages the MMPA, coastal law enforcement, drafts needing legislations by the local council, buoy/marker replacement, sourcing of funds for the MPA. The VSLA (CoMSCA) groups in the Darwin sites established and started collecting an Environment Fund from members which the groups can use for mangrove rehabilitation activities, coastal clean-up or purchase markers for the MPAs.

- **Were any management plans for biodiversity developed?**

Yes, Coastal Resource Management plans were developed and adopted by the local councils in Ivisan and Madrideojos (Appendices 14, 40 and 41). MPA management plans

were developed and passed by the village councils in Batasan, Matabao, Kodia (with Oboob MPA management plan still pending) (Appendix 39).

- **Were these formally accepted?**

Yes, the Coastal Resource Management plans were formally accepted in the form of ordinances at the municipal level. MPA management plans were formally adopted at the village level.

- **Were they participatory in nature or were they ‘top-down’?**

These were participatory and ‘bottom-up’ in approach: Community members are active participants during community consultations and Peoples Organisation members are also active participants in the planning sessions. Only once the communities have fully adopted these plans to they go forward to be formalised. At the local government level, we work closely to align plans with local priorities and needs so that there are good synergies between the government and community needs. This streamlines the adoption of plans, increases the probability of effective implementation and also facilitates access to funds from village and local government budgets to support implementation.

### **How well represented are the local poor including women, in any proposed management structures?**

Within the People’s Organisations, women (58%) occupied more leadership positions than men (41%) (Appendix 53). All MPA Management Councils included women in leadership positions, formalised within MPA Management Plans (Appendix 39).

- **Were there any positive gains in household (HH) income as a result of this project?**

Yes. For the 3 VSLAs for which we have 3 years of data, average increase in savings per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one cycle, an average increase of 28% (7 VSLAs).

Income from livelihoods such as oyster farming, using the raft method (P55,755; £858), from fish processing (P41,320; £636), driftwood sculpture (P69,327; £1,067), mangrove seedling production (P578,912; £8,906), seaweeds farming (P46,494; £715), ecopark management, entrance fees, donations and associated food business (P224,964; £3,461) and Net-Works net collection (P27,366; £421).

- **How many HHs saw an increase in their HH income?**

25 VSLAs with 495 HH members. Livelihoods were diversified to include the following in 8 communities benefitting 703 households. There is an overlap between HH members in VSLAs and HH members involved in livelihood diversification projects and further analysis is underway to determine the total benefit per HH.

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Detailed above. Calculations were based on HH average monthly income set at P2,500 (using the nationally adopted Community Based Monitoring System Local Government Unit data) = £38.50/month or £462 per year.

### 3.6 Transfer of knowledge

- The Darwin project published a new “Manual for Trainers Mangrove and Beach Forest Rehabilitation and Conservation, Mangrove Manual Series No. 3 authored by JH Primavera, JP Savaris, RJA Loma, JD Coching and CL Montilijao. First edition 2015. This manual was used as key resource during the delivery of all Mangrove and Beach Forest training courses, reaching 1,250 participants in total (734 participants as part of the Darwin project).
- Our mangrove field guide and mangrove and beach forest training manuals were adopted, simplified and reprinted by the Philippines Tropical Forest Conservation Foundation that now use these materials for all of their projects.
- 5 peer reviewed publications transfer knowledge within the scientific community as well as increased scientific capacity due to the number of students (national and international) engaged with this project and achieving qualifications (Annex 5).
- Our team has focused on sharing information through workshops, symposia and lectures within the Philippines and internationally providing excellent opportunities for knowledge transfer (Annex 5).
- Dr. Jurgenne Primavera together with a lawyer from another NGO in the Philippines drafted the Philippine Greenbelt Law which was sponsored by Senator Bam Aquino and representative Batocabe in 2014 and 2015. The bill is still being deliberated in the Senate/ House of Representatives at present.

#### Did the project result in any formal qualifications?

- [How many people achieved formal qualifications?](#) 3
- [Were they from developing countries or developed countries?](#) Developed
- [What gender were they?](#) All female

### 3.7 Capacity building

Dr Jurgenne Primavera was recognised as an Academician of the Philippines National Academy of Sciences. This prestigious honour recognizes and supports exemplary Filipino scientists, promoting the advancement of science and encouraging youth to pursue science related careers.

Dr Jurgenne Primavera was appointed to the UNESCO International Advisory Committee for Biosphere Reserves. The Committee is composed of twelve members, who are appointed for four years by the Director-General, after consultation with the Member States and or the National Committees for the Man and the Biosphere Programme of the countries concerned. The members of the Committee are selected for their scientific qualifications and for their experience in promoting and implementing the concept of biosphere reserve.

- [What gender were they?](#) Female

## 4 Sustainability and Legacy

VSLAs (CoMSCAs) have become an integral part of our conservation interventions and have been demonstrated to be highly sustainable (90% operating after 5 years, Bill and Melinda Gates Foundation).

The combination of MPAs with municipal ordinances integrated into Coastal Resource Management Plans of the local government and with the deputised fish wardens and MPA Management Councils provide a strong governance framework for the MPAs to endure.

The Philippines Greenbelt Bill which was authored by Dr Jurgenne Primavera (with an environmental lawyer) and sponsored by Senator Bam Aquino and currently in Parliamentary hearing. If passed, this will dramatically increase the legislation around the protection and rehabilitation of mangroves and beach forests within the Philippines.

The project staff were retained due to their expertise and transferred to other projects within ZSL Philippines. One of the local Community Organisers has been working as a research

assistant for a research project. Due to her technical skills developed during this project, Surshti Patel was promoted from Project Coordinator to Junior Technical Specialist. A number of the project team have returned to the recently supported Darwin project (24-027). Due to ongoing illness, Josephine Savaris is working on a very part-time basis to provide technical input during the project start-up phase and plans to take early retirement.

## 5 Lessons learned

What worked well, and what didn't work well?

Well:

- Our ability to leverage counterpart funding through a wide range of sources from communities to corporate partners delivered a huge range of benefits to the project and associated collaborations.
- The strong team had a good mix of practical community-level, biological and theoretical/scientific skills which produced strong results and a good dynamic.
- We were able to mobilise national and international scientific collaborations to deliver in depth scientific studies that considerably enhanced our knowledge base (and profile internationally) at limited/no cost to the project.
- We received good support from communities, local and national government agencies with associated legislative support (from village level approval to a Bill sponsored for review by Parliament) through aligning activities with community wishes/needs and local and national government plans.
- The concept of diversifying habitats through including mangroves and seagrasses into coral reef focused MPAs works well to increase the area protected and associated ecosystem functionality.
- The VSLA (CoMSCA) builds strong community cohesion, engagement and support as well as a way of providing additional income through savings.
- The addition of the Environment Fund to VSLAs has enhanced community empowerment to believe they do not have to wait for NGO/government funds before they can act for the environment. This has really energised and shifted the dynamics in a positive way for communities.
- We have seen women grow in community leadership roles through the VSLAs, MPA Management Councils and livelihood diversification interventions.
- Extractive activities have reduced through the introduction of production oriented livelihoods developed with a strong set of environmental and sustainability parameters e.g. aquaculture of oysters that are low in the food chain.
- Our science-based approaches (social and biological) meant we documented and published our work through a wide range of knowledge products (peer reviewed papers, manuals, posters) and training courses that maximised knowledge transfer.
- We made excellent progress in standardising methods and developing the associated M&E tools (but there were challenges of not having some of these approaches in place and consistent across the project areas and sites for much of the project).
- Our experience with the Net-Works business model changed our approach to livelihood diversification e.g. including a P3 charge per seedling in the mangrove and beach forest nurseries to provide support from biologists. This shifted the dynamic in a positive way from a donor relationship to a business relationship where the communities were more than happy to build our support into their business plans.
- Powerful narrative, individual stories and images that worked well when shared through social media and other communication platforms.

Less well:

- It proved challenging to fully integrate all elements (biological, socioeconomic etc.) of the project across three distant geographic areas with different teams on the ground. This resulted in some elements of the projects moving slower in some sites than others e.g. livelihood diversification moved much faster in Panay than the Bohol sites.

- The slow analysis and feedback of biological data to management – including the MEAT assessments - meant a) we did not pick up the challenges in MPA recovery until late in the project and b) overharvest of mangrove seedlings for livelihood projects at one site. This was due to the slow processes of data collection in the field and time and resources involved (and capacity) to encode, analyse and then feedback results to the communities.
- Biological recovery of fish and reefs was slower than anticipated following the earthquake and typhoon damage.
- There was not full understanding of socioeconomic metrics and methodologies across the team to ensure effective collection and analysis of data to respond to the indicators set at the outset of the project.
- More beneficial if VSLAs are exclusive to PO members as they strengthen access to finances and maintain regularity in the conduct of meetings that help wider project interventions. However, it is important to follow the very specific proven protocols for VSLAs and resist the temptation to adapt them.
- The net collecting component of Net-Works did not fulfill the expectations set out in the project proposal. Three major factors affected the volume and pace of net-buying, including (1) misconception of communities that discarded nets are used as lining for coffins, (2) the Net-Works price structuring/business model did not enable aggressive buying, and (3) presence of scrap buyers at project sites who competed with net-buying and offered a higher price.
- A downward trend in beach forest and mangrove seedling production was observed in Pedada, making it less feasible as a sustainable livelihood option and demonstrating the importance of livelihood diversification vs totally switching people from one livelihood to another. The reduced market was due to the changes in the government (National Greening Program) and end of post-typhoon Haiyan rehabilitation projects combined with competition from other groups who are now also seedling producers.
- Getting databases online and open access which requires a skillset that we did not have within the project team.

If you had to do it again, what would you do differently?

- Increase the time and resources to train 'second line' leaders to ensure there is a succession plan to reduce reliance on key individuals.
- Increase local government unit capacity for biophysical monitoring and MPA enforcement and institutionalize the involvement of communities in coastal law enforcement activities.
- Improve approaches to livelihood diversification from ensuring the community organisers have sufficient knowledge and skills to ensuring new options are implemented early in the project to enable 3 business cycles by the project end to increase their potential for sustainability.
- Provide more structure and regularity to the process of giving feedback sessions to communities.
- Use social marketing methodologies to improve community engagement in MPAs.
- [What recommendations would you make to others doing similar projects?](#)
- Need for regular information/education/communication to community members, particularly MPA Management Councils on the purpose, goals and performance of their MPA to align objectives, expectations and actions.
- Ensure there is a robust business plan in place to serve as guide in systematically implementing livelihoods chosen and project team capacity to support these (or access to the relevant expertise).



- Proper documentation and transparency relating to income earned with a clear sharing scheme to avoid conflict among community group members on group income generating schemes.
- As part of their sustainability plan, the PO (community group) needs to allot amount or % of income earned to the organizational fund.
- Community leadership needs to be considered as a major influence in the effectiveness or otherwise of a project, and engaging more women in leadership roles brings very positive results.
- Spend time on M&E design and review it regularly.
- [What key lessons have been learnt as a result of this project? \(including administrative, management, technical, M&E\).](#)
  - Having people focused on the M&E aspects of the project with meaningful and focused (vs multiple) indicators agreed early on.
  - Developing, implementing and reinforcing standardised methodologies.
  - The importance of not just collecting a lot of data, but ensuring that it is quickly analysed and interpreted and then used to inform the project.
  - Setting a management structure and working practices that avoid staff burn out when working across multiple sites with complicated logistics to travel between sites and tough field conditions on site.
  - Targeted time for technical experts to work with field staff to ensure that research findings and theory are well integrated and the project rationale's fully understood.
  - The importance of documenting standardised methodologies that are understood and adopted (with training as needed) across the entire project.
  - There are is a comfortable and enjoyable forum provided for the team to discuss, challenge, learn and question all aspects of the project to ensure it continues to learn and deliver to the best possible conservation and community outcomes.

## 5.1 Monitoring and evaluation

There were no major changes in the project design.

Overall the project management M&E systems worked well through monthly reporting, regular communications, the Darwin reporting cycle and biannual project planning meetings with the entire project team.

We have advanced our M&E systems, initially focused on the Net-Works component (developed, trialled and then implemented in 2015) before expanding. This has now provided a strong legacy from the project for ZSL-Philippines going forward (including the new Darwin project with a defined set of indicators and approaches. Our work to improve M&E over the project period includes:

- a) Refining our **socioeconomic approaches** to develop a standardised methodology, incorporating the following components
  - The modification of the style of questioning used to gather attitudes and knowledge away from statement based agreement scales including the introduction of willingness to pay question to look at both quantitative and some qualitative information which means we can look at change over time. These were developed through research of good examples of best practice (e.g. Waylen, 2010 and Howe, 2009).
  - Food security indicators based on the standardised globally comparable; Food Insecurity Experience Scale developed by the FAO and adopted as an indicator by the UN SDGs to look at access and coping strategies.
  - The introduction of subjective well-being questions to test and support questions on material style of life and income question were also modified to include two types of questioning for a 12 month recall and 7 day recall period to give a measure of overall importance/reliance of each income source to the household and some indication of the effort involved.

- The section on marine protected areas was modified to enable us to collect more robust data and measure change related to the social marketing being implemented including indicators or community participation in management of marine resources, community awareness of illegal fishing within their MPAs and community enforcement levels.
- For a few questions, new techniques were introduced to maximise respondent engagement and shorten interview time to ensure fatigue did not set in and participants would be willing to be re-interviewed.

b) Biological and biophysical surveys.

- We consolidated all of our biological survey methods into an in house manual which is currently being edited.
- In 2015, we developed a standard approach to biophysical surveys used to measure % plastic along coastlines, these were also modified to improve sampling through the introduction of GIS and mapping pre surveys, to ensure we survey a representative sample, and the type of transects used were also modified. The data analysis was also reviewed and an innovative approach was introduced to save time and remove some human error involved in visual surveying and recording. Coral Point Count with Excel extensions (CPCE) is a Windows based software that provides a tool for determining substrate cover using transect photographs, it is typically used for coral reef monitoring and assessments. ZSL modified the coding, with permission of the National Coral Reef Institute to apply the software to plastics and other waste. Led by Surshti Patel (project coordinator), the team trialled and tested the software to create categories for analysis, work out the minimum number of points needed to ensure extrapolation was accurate for each quadrat, and validated results against quadrat photographs. This was then applied across all sites and will be used for a quantitative change analysis year on year.

c) **VSLA M&E.** Since 2015, standardised reporting of agreed key metrics including; membership status, loan fund status, total savings (in local currency and US dollars) for VSLAs implemented by ZSL globally, this includes all groups in Cameroon and Mozambique. Standardised surveys and databases are set-up and implemented by each country. These data are then sent through to the team in the UK who amalgamate the data and produce global reports to share with UK staff and country offices and local partners and in external communications. Country specific and funder specific reports are also produced and disseminated.

d) **Electronic data collection.** Since June 2016, we have been exploring electronic data collection to help achieve more integrated (nationally and internationally) and standardised reporting of project milestones and M&E. We also want to reduce the time delay in the feedback loop of data collection and analysis to feedback and then dissemination to participants i.e. local communities through faster collection. This also eliminated the need for double encoding (on paper and then into a database), improves accuracy so less time is spent cleaning the data and eventually set up simple platforms so that as data is pushed into the server, it is pulled out into a standardised visual report which can be viewed instantly by users and disseminated in near real time. Arguably, this final step is the most critical in the monitoring, evaluation and learning cycle. In November 2016, ZSL contracted Ikapadata a survey research company with extensive experience in working with companies and NGOs to get their data collection online. Ikapadata worked with ZSL to design the online survey and platforms, and advised on the implementation of mobile data management system; Survey CTO. Survey CTO (used by World Bank, JPAL and IFPRI) is an ODK-Based solution which allowed its users to build electronic data collection forms using a visual development tool, and has its own server to host the data, have data exporting and basic analysis tools and offer support. We piloted the tools and platforms in February 2017 across with 8 VSLA groups, and conducted a small evaluation with the in-country team on both the device and the platform. It has been received well, and we are exploring back-end database

solutions and working to get other paper forms online. This approach is built into our new Darwin projects in the Philippines.

## 5.2 Actions taken in response to annual report reviews

Update from points raised in independent review:

1. Net-Works initiative seems unlikely to yield the planned poverty-alleviation benefits.

Progress was been made against this activity as reported elsewhere. As net volumes are relatively low in the project sites, we instead focused on livelihood diversification as a mechanism to bring the planned poverty-alleviation benefits.

2. Availability of anchovy for boneless dilis industry.

In collaboration with local university partners and as reported elsewhere, we conducted studies on boneless dilis populations and the sustainability of the fishery to ensure this is an integral component of the development of this livelihood.

3. Arrangements to cover the absence of Darwin project manager Josephine Savaris.

After a period of serious illness and recovery, Josephine Savaris returned to work on a part time basis in January 2016 and was back to work fulltime in March 2016. In the interim, she was supported by Rona Joy Loma who took on more management responsibility. Rona Joy Loma then went on maternity leave in June for 3 months (Philippines statutory) and in that time maternity cover and additional project support was provided by biologist Christian Montilijao. Further management support was provided by ZSL-Philippines Country Manager Glenn Labrado and Project Leader Heather Koldewey. Following her return to work, Josephine managed the project effectively through to completion and preparation and submission of this report.

Have you discussed the reviews with your partners and other collaborators? Yes

## 6 Darwin identity

The Darwin logo was used extensively throughout the project and in a variety of media, including manuals, posters, flyer, tidal calendar, attendance sheets, streamers, certificates of participation and maps (examples given in Appendix 54) as well as online through use of the @Darwin\_Defra with social media postings.

## 7 Finance and administration

### 7.1 Project expenditure

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			-22%	The Darwin Project Manager was taken seriously ill in 2015, then returned to work part-time from Jan-March 2016 before resuming full-time until the project end but with revised activities. In that time we had

				to provide additional staff support as cover. Rona Joy Loma (biologist and management cover for Josephine) went on maternity leave in June 2016 for 3 months (Philippines statutory) and in that time maternity cover and additional project support was provided by biologist Christian Montilijao.
<b>Consultancy costs</b>				
<b>Overhead Costs</b>			<b>18%</b>	Overheads were reduced to compensate for overspend on salaries
<b>Travel and subsistence</b>			<b>12%</b>	Changes in fuel prices, counterpart funds from partners and adjusted travel schedules and patterns during periods of staff illness and maternity leave (above)
<b>Operating Costs</b>			<b>17%</b>	Additional central support was provided to reduce operating costs to compensate for overspend on salaries
<b>Capital items (see below)</b>			<b>20%</b>	More economical options found compared to original budget
<b>Others (see below)</b>			<b>25%</b>	Counterpart funding secured for outreach materials enabled us to reduce these costs
<b>TOTAL</b>	<b>110,484</b>	<b>110,504</b>		

<b>Staff employed (Name and position)</b>	<b>Cost (£)</b>
Glenn Labrado ZSL-Philippines Country Manager	
Jurgene Primavera Chief mangrove scientific advisor (Philippines)	

Josephine Savaris Project manager (Philippines)	
Gene Fernandez – left and replaced by George Hibionada in 2015 Driver/messenger (Philippines)	
Billie Joe Redira, Dax Dequito & Rosendo Community Organisers (Philippines)	
Francis Remulta & Pelsy Barber Local community organisers (Philippines)	
Myrtle Aria & Apol Loma Roy Biologists (Philippines)	
Surshti Patel Project coordinator (UK)	
<b>TOTAL</b>	<b>£ 61,042</b>

Capital items	Capital items – cost (£)
Computers, printers, scanners etc	
<b>TOTAL</b>	<b>£796</b>

Other items	Other items – cost (£)
Guardhouse rebuilds Buoys, boats, signs for MPAs Manuals and outreach materials Peer-reviewed publications Livelihood start-up costs MPA surveys	
<b>TOTAL</b>	<b>£8,787</b>

## 7.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Waterloo Foundation (in original application)	
Selfridges & co. (in original application £16,230 for 2014, but secured subsequent 2 years of funding)	
Interface Inc. (in original application)	
Interface Inc. (in kind support through staff salaries, film, UK Embassy in Philippines event, website and communications)	
ZSL (in kind staff salary contribution as in original application)	
GIZ PAME (staff support in Bantayan)	
International Institute for Rural Reconstruction (training and activities in Ivisan)	
Local Government Units (details in Appendix 4)	
Bureau of Fisheries and Aquatic Resources (details in Appendix 4)	

Department of Social Welfare and Dvelopment (details in Appendix 4)	
Adventist Development and Relief Agency (details in Appendix 4)	
Smart Communications (details in Appendix 4)	
Food and Agriculture Organisation (details in Appendix 4)	
Philippine Rural Development Project/World Bank (details in Appendix 4)	
<b>TOTAL</b>	<b>535,120</b>

<b>Source of funding for additional work after project lifetime</b>	<b>Total (£)</b>
The Turing Foundation (2017-2020)	
Waterloo Foundation (2017-2020)	
Interface Inc. (2017)	
Darwin Initiative (2017-2021)	
American Chemistry Council (2017)	
ZSL core funding (staff time in UK and Philippines and office running costs from 2017 to 2021)	
<b>TOTAL</b>	<b>808,483</b>

### 7.3 Value for Money

The project was value for money due to the additional funds and in kind support we were able to secure from partner organisations, local government and communities. By working with Interface Inc. we were able to access communication opportunities and expertise beyond most NGOs. Our approach has always been to ensure that local partners provide some kind of counterpart funding, such as venues, labour or meeting costs, to show they support the project and are engaged in the joint delivery of activities and outputs. The post-earthquake, post-Typhoon Haiyan period was also an interesting time to engage new partners, such as humanitarian and development agencies, as well as national government, in building social and environmental resilience.

The Philippines is a relatively low cost country to work and we have always run our projects under a professional yet frugal framework e.g. we do not issue per diems (which can lead to staff cutting corners on food and accommodation) but set guidelines on allowances for different contexts and require full reconciliations.

# Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

**Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.**

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p><b>Goal/Impact</b></p> <p>Community-based marine protection in the Philippines contributes to disaster recovery and resilience to natural disasters while helping meet national and international targets (10% by 2020) through habitat and livelihoods diversification.</p>			
<p><b>Purpose/Outcome</b></p> <p>1,000ha of coastal habitats across four provinces in the Philippines are effectively protected and sustainably managed by communities, reversing declining trends in local fisheries, and rebuilding for more resilient livelihoods.</p>	<p>Indicator 1 At least 200 ha of mangroves, seagrasses and coral reefs are protected in two new MPAs (Bantayan (Cebu province), Iloilo/Capiz) and at least 800 ha are protected through restoring and strengthening two existing MPAs and six mangrove forest sites in four provinces (Bohol, Northern Cebu, Capiz, Iloilo), including using government tenurial instruments (Community-based Forest Management Agreements; CBFMAs), making a total of 1,000 ha effectively protected by year 3 from a baseline of 60 ha.</p> <p>Indicator 2 Current declines in fish biomass and habitat cover for corals and mangroves within new and existing MPAs will be halted or reversed by year 3.</p> <p>Indicator 3 Set baselines in year 1 through household baseline surveys and achieve an average of at least 20% improvement in locally-defined wellbeing scores and material style of life indices for 2,000 households within the 10 target villages by year 3. Wellbeing will be assessed using subjective quality of life approaches</p>	<p>Maps and GIS database of sites, training workshop reports, MPA ordinances, CBFMAs awarded, fish/forest warden names and legal certificates of registration.</p> <p>MPA survey reports, MPA open access database, MPA local monitoring team reports, community feedback.</p> <p>Socioeconomic survey reports.</p> <p>List of members of VSLAs, reports from training workshops, savings books, annual report on savings and loans.</p> <p>Tons of nets collected, accounts of funds received by VSLAs for nets sold.</p> <p>Household surveys, case studies, significant change stories and photos, progress reports</p> <p>Membership lists of MPA management committees, training reports, fish/forest warden names and legal certificates of registration, records of poaching</p>	<p>Government bureaucracy and political processes e.g. elections do not significantly delay implementation at project sites.</p> <p>Further natural disasters, particularly tropical storms, typhoons and earthquakes do not hinder significantly project sites or activities.</p> <p>Communities can be trained technically to implement stock enhancement for sea cucumbers, sea urchins and/or abalone to a level that ensures income exceeds expenditure.</p> <p>The Philippines model developed in this project is broadly applicable to other DFID priority countries with mangroves.</p>

	<p>applied to fisheries and quantitative indicators (e.g. the proportion of households with tin roofs).</p> <p>Indicator 4 Number of households in VSLAs increases from 100 at project start to 320 by year 3, with an average of £20 each in savings (based on experience in Bohol).</p> <p>Indicator 5 Communities assessed and where feasible, linked up to Net-Works business model which involves collecting an average of 200kg of nets per month per site for recycling (equivalent to £560 per village per year in communities where average household income is ~£110 per month) by year 3.</p> <p>Indicator 6 All 10 communities have diversified livelihoods to include sustainable enterprises (e.g. NetWorks, aquaculture, mangrove enterprises) with an increase from an average of 2 to 2.5 livelihoods across the 2000 households in the target villages by year 3.</p> <p>Indicator 7 4 project MPAs are independently scored from Level 3 (Sustained) to Level 4 (Institutionalized) under the National MPA Effectiveness Assessment Tool (MEAT) for effective management and enforcement by year 3 (none scored prior to project).</p> <p>Indicator 8 This Philippines model for sustainable community-based MPAs that encompass mangrove habitats is replicated in at least 1 site in the Philippines and in at least 1 DFID priority countries by the end of Year 3 through invited cross-visits with project staff.</p>	<p>incidents and apprehensions, MEAT evaluation scores.</p> <p>2014 World Parks Congress resolutions, 2016 CBD Philippines national report, cross-visit reports, training reports, training manuals disseminated.</p>	
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<p>Output 1.</p> <p>10 VSLAs implemented by year 2, and this number &gt;doubled through the Village Agent model by year 3, increasing the financial security of villagers in four provinces (Bohol, Cebu, Iloilo, Capiz) and acting as a platform for community engagement in the management and protection of coastal ecosystems.</p>	<p>Indicator 1 At least 10 VSLAs with 15-25 members established through People's Organisations or MPA management committees in project sites by year 1.</p> <p>Indicator 2 At least 1 additional VSLA established in each of the 10 total sites through Village Agents by year 3, taking the total number of households engaged in VSLAs to at least 320.</p> <p>Indicator 3 Households involved in VSLAs see improvements in living conditions (measured through socioeconomic surveys as material style of life and locally defined wellbeing indicators that are identified by socioeconomic/wellbeing assessments) by year 3.</p> <p>Indicator 4 Female household heads report reduced frequency in the use of food coping strategies, reflecting improved food security, by year 3.</p> <p>Indicator 5 Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.</p> <p>Indicator 6 Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.</p>	<p>MPA Management Committee and People's Organisation records and documents (e.g. MPA management plans).</p> <p>Biological and socioeconomic survey reports.</p> <p>Training manuals.</p> <p>Transaction records for VSLAs (savings books).</p> <p>Open access database of MPA monitoring surveys for up to 14 years.</p> <p>GIS and satellite maps of project sites.</p> <p>Student project theses.</p> <p>Annual project progress reports.</p> <p>Peer-reviewed papers.</p> <p>Website information, blogs, social media, images and videos</p>	<p>Infrastructure damage from earthquake/typhoon does not hamper project activities, beyond that known and planned for from site visits and assessments.</p> <p>Communities have the will to manage their natural resources effectively in the light of recent natural disasters.</p> <p>Sufficient numbers of households are interested and able to engage in VSLAs.</p> <p>Appropriate enterprises can be developed that can absorb sufficient labour and are more economical than fishing.</p> <p>Aquaculture ventures do not negatively impact MPAs or mangrove habitats.</p> <p>Households that engage in VSLAs and new enterprises include fishers.</p>
<p>Output 2.</p> <p>The Net-Works project is operating in at least 3 of the target villages in Bantayan (Cebu province) and Bohol, with villages feeding into the two</p>	<p>Indicator 1 At least 11 tons of discarded nets collected from 5 villages annually and fed into global supply chain through Interface.</p>		

<p>sustainable business units (one in Bohol, one in Bantayan) that engage 20 communities in collecting an average of 200kg of discarded fishing nets per month and per village by year 3; cleaning beaches, preventing ghost fishing, and providing sustainable income.</p>	<p>Indicator 2 100 households earning additional income from NetWorks in year 2 and 300 households earning additional income from year 2.</p> <p>Indicator 3 Business model of NetWorks generates sufficient funds to support a local co-ordinator salary by Year 2.</p>		
<p>Output 3. Business models developed and implemented at buffer zone sites adjacent to mangrove MPAs that diversify community livelihoods and include income from seaweed farming, mussel culture, ranching sea cucumbers/abalone, and mangrove nurseries.</p>	<p>Indicator 4 Annual coastal clean-up event implemented in 10 villages.</p> <p>Indicator 1 Feasibility study report of potential sustainable aquaculture ventures at each of the 10 project sites with community feedback by the end of Year 1.</p> <p>Indicator 2 Seaweed farms and mussel farming re-established at sites damaged by earthquake/typhoon by the end of Year 1.</p> <p>Indicator 3 Mangrove nurseries operational in at least 8 project sites by the end of Year 1 and supplying government agencies, NGOs and/or private companies by the end of Year 2.</p> <p>Indicator 4 Pilot studies completed (with biological and economic data recorded as part of local university student research projects) for three trials of grow-out of juvenile abalone and sea cucumbers supplied by SEAFDEC at 2 sites by the end of Year 3.</p> <p>Indicator 5 Business plans in place for five livelihoods linked with coastal protection and sustainable marine resource use connected to an action plan for dissemination and replication by the end of Year 3.</p>		

<p>Output 4</p> <p>&gt;1,000 ha of mangrove, seagrass and coral reef habitats are effectively protected through MPA ordinances and community-based forest management agreements (CBFMAs) in four provinces (Bohol, Bantayan Island (Cebu province), Capiz, Iloilo) by year 3.</p>	<p>Indicator 1 Two new MPAs that include mangroves with legal ordinances in place by the end of year 3 in Bantayan Island (Northern Cebu) and Capiz or Iloilo.</p> <p>Indicator 2 MPA infrastructure restored (marker buoys, guardhouse, patrol boats, signage) in two villages in Bohol (Batasan, Matabao) by Year 1.</p> <p>Indicator 3 CBFMAs in place for 3 villages in Capiz and Iloilo by Year 2 (Pedada, Balaring, Buntod) and underway in 3 further villages (provisionally Matabao, Bohol; Obo-ob, Bantayan; Basio, Capiz).</p> <p>Indicator 4 Two MPAs in Bohol (Batasan, Matabao) expanded in area by the end of Year 3 supported by a local ordinance.</p> <p>Indicator 5 Area of mangrove replanted using ZSL's science-based methodology (Primavera et al., 2013) in 10 project sites by the end of Year 3.</p> <p>Indicator 6 Area of mangrove replanted using ZSL's science-based methodology (Primavera et al., 2013) in 10 project sites by the end of Year 3.</p>		
<p>Output 5</p> <p><b>7 (note this has been changed from 10 following biological assessments)</b> mangrove MPAs and community-based mangrove forest management plans are being implemented by year 2 from a baseline of 0, with MPAs enforced by 20 legally deputised fish and forest wardens, rated between Levels 3-5 under the national MPA Rating System (MEAT).</p>	<p>Indicator 1 MPA and mangrove forest management plans for all sites by Year 3</p> <p>Indicator 2 Project sites featured in relevant local government Coastal Resource Management Plans by Year 3</p> <p>Indicator 3 Deputised fish and forest wardens by Year 3</p>		

	<p>Indicator 4 Number of patrols, apprehensions and fines conducted by fish and forest wardens documented by Year 3</p> <p>Indicator 5 Species and habitat survey data reported annually</p> <p>Indicator 6 Open access database of 14 years of MPA monitoring data online by the end of Year 2</p>		
<p>Output 6</p> <p>Side event at CBD SBSTTAs and/or COP and presentation at the 2014 IUCN World Parks Congress provide the forum for dissemination, that result in stakeholder cross-visits and training sessions to replicate the approach in 1 DFID priority countries with mangroves.</p>	<p>Indicator 7 MEAT rating generated annually</p> <hr/> <p>Indicator 1 Project information presented at CBD SBSTTA and/or COP by Year 3</p> <p>Indicator 2 Project presented at 2014 IUCN World Parks Congress by Year 1</p> <p>Indicator 3 One stakeholder cross-visit and training session in 1 DFID priority country with mangroves by Year 3.</p>		

## Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
<p><b>Impact:</b></p> <p>Community-based marine protection in the Philippines contributes to disaster recovery and resilience to natural disasters while helping meet national and international targets (10% by 2020) through habitat and livelihoods diversification.</p>		<p>Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits</p> <p>2,111.43 ha of coastal habitat has been protected through new and expanded marine protected areas (MPAs).</p>
<p><b>Outcome</b></p> <p>1,000ha of coastal habitats across four provinces in the Philippines are effectively protected and sustainably managed by communities, reversing declining trends in local fisheries, and rebuilding for more resilient livelihoods.</p>	<p>Indicator 1 At least 200 ha of mangroves, seagrasses and coral reefs are protected in two new MPAs (Bantayan (Cebu province), Iloilo/Capiz) and at least 800 ha are protected through restoring and strengthening two existing MPAs and six mangrove forest sites in four provinces (Bohol, Northern Cebu, Capiz, Iloilo), including using government tenurial instruments (Community-based Forest Management Agreements; CBFMAs), making a total of 1,000 ha effectively protected by year 3 from a baseline of 60 ha.</p> <p>Indicator 2 Current declines in fish biomass and habitat cover for corals and mangroves within new and existing MPAs will be halted or reversed by year 3.</p> <p>Indicator 3 Set baselines in year 1 through household baseline surveys</p>	<p>Report on progress towards achieving the project purpose, i.e. the sum of the outputs and assumptions</p> <p><b>Exceeded: 2,111.43 ha of coastal habitat has been protected and restored in three provinces (Panay, Cebu and Bohol) through the establishment of MPAs that includes mangroves by this project, meaning the area target was exceeded.</b></p> <p>Completed: Annual surveys were conducted across all sites to establish the status of fish biomass, corals, mangroves and seagrass beds. Management effectiveness is being improved through the training and deputisation of fish wardens in all sites and implementing the national standard method for MPA effectiveness assessment. All MPA sites mapped on GIS. Fish biomass increased in Ivisan MPA and there was a general increase in mangrove and seagrass habitats across project sites.</p> <p>Partially completed: Household surveys to establish the socio-economic status of the households in the focal sites have been conducted and data</p>

	<p>and achieve an average of at least 20% improvement in locally-defined wellbeing scores and material style of life indices for 2,000 households within the 10 target villages by year 3. Wellbeing will be assessed using subjective quality of life approaches applied to fisheries and quantitative indicators (e.g. the proportion of households with tin roofs).</p> <p>Indicator 4 Number of households in VSLAs increases from 100 at project start to 320 by year 3, with an average of £20 each in savings (based on experience in Bohol).</p> <p>Indicator 5 Communities assessed and where feasible, linked up to Net-Works business model which involves collecting an average of 200kg of nets per month per site for recycling (equivalent to £560 per village per year in communities where average household income is ~£110 per month) by year 3.</p> <p>Indicator 6 All 10 communities have diversified livelihoods to include sustainable enterprises (e.g. NetWorks, aquaculture, mangrove enterprises) with an increase from an average of 2 to 2.5 livelihoods across the 2000 households in the target villages by year 3.</p> <p>Indicator 7 4 project MPAs are independently scored from Level 3</p>	<p>encoded. Locally-defined wellbeing scores were not well documented in this project. However, improvement in wellbeing was documented through access to new and improved livelihoods and membership of VSLAs.</p> <p>Exceeded: 25 VSLAs formed with 495 members (130 male and 382 females). An additional P2,606 (£40) to P29,764 (£458) added per HH income over the project period, exceeding the target set.</p> <p>Completed: Four sites (Batasan, Inanoran, Matabao and Pedada) are collecting nets and supplying the Net-Works business model at an average of 40-50 kilos per month. A total of 439 HH in the four sites, composed of 6 VSLA groups and 1 PO (BPFA) earning additional income from net buying.</p> <p>Completed: Livelihoods were diversified to include the following in 8 communities benefitting 703 households: 1. Ecopark management for Oboob and Pedada; 2. Oyster farming in Basiao and Buntod; 3. Driftwood sculpture in Buntod; 4. Mangrove/ Beach forest seedling production in Pedada and Kodia; 5. Net-Works in Matabao, Batasan and Pedada; 6. Boneless dilis in Basiao and Balaring; 5. Bee keeping for honey production in Pedada; 6. Seaweed farming in Pedada; 7. Net collection in Batasan, Inanoran, Matabao and Pedada</p>
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	(Sustained) to Level 4 (Institutionalized) under the National MPA Effectiveness Assessment Tool (MEAT) for effective management and enforcement by year 3 (none scored prior to project).	Partially achieved: The project MPAs were scored at Level 1 (established) using the national standard MPA Management Effectiveness Assessment Tool (MEAT) (from a baseline of Level 1, Established). Shortfalls in enforcement capacity were the primary challenges, as well as the time to institutionalisation (Level 4) which can only be achieved after 5 years.
	Indicator 8 This Philippines model for sustainable community-based MPAs that encompass mangrove habitats is replicated in at least 1 site in the Philippines and in at least 1 DFID priority countries by the end of Year 3 through invited cross-visits with project staff.	Partially achieved: Mangrove protection was incorporated in the Marine Strategy developed by the IUCN World Parks Congress following interventions by the Darwin project team and this was followed up in Year 2 with an international mangrove symposium in China and a National Mangrove Symposium in the Philippines, both organised by ZSL. Net-Works has been expanded into Indonesia in partnership with Sea Net.
<b>Output 1. Insert agreed Outputs with Activities relevant to that output in lines below</b>	<b>Insert agreed output level indicators)</b>	<b>Report general progress and appropriateness of indicators</b> , and reference where evidence is provided e.g. <i>Evidence provided in section 3.2 of report and Annex X</i>
<b>Output 1</b> <b>10 VSLAs implemented by year 2, and this number &gt;doubled through the Village Agent model by year 3, increasing the financial security of villagers in four provinces (Bohol, Cebu, Iloilo, Capiz) and acting as a platform for community engagement in the management and protection of coastal ecosystems.</b>	Indicator 1 At least 10 VSLAs with 15-25 members established through People’s Organisations or MPA management committees in project sites by year 1.  Indicator 2 At least 1 additional VSLA established in each of the 10 total sites through Village Agents by year 3, taking the total number of households engaged in VSLAs to at least 320.  Indicator 3 Households involved in VSLAs see improvements in living conditions (measured through	<b>Report completed or progress on activities that contribute toward achieving this Output</b>  <b>Report general progress and appropriateness of indicator</b>  Exceeded: 25 VSLAs formed with 495 members (130 male and 382 females) were established over the project period. (Section 2.1)  Exceeded: 11 Village agents were trained across all Darwin sites. One of the criteria was for an applicant Village Agent to at least complete one VSLA cycle in order to qualify. (Section 2.1)  Partially completed: VSLA groups are dominated by women with 366 members (74 %), only 110 members are men (26%). Locally defined wellbeing indicators and food coping strategies were not well documented.

	<p>socioeconomic surveys as material style of life and locally defined wellbeing indicators that are identified by socioeconomic/wellbeing assessments) by year 3.</p> <p>Indicator 4 Female household heads report reduced frequency in the use of food coping strategies, reflecting improved food security, by year 3.</p> <p>Indicator 5 Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.</p> <p>Indicator 6 Households engaged in VSLAs saving at least US\$20 per year and investing 25% of savings and loans in new enterprises (non-capture fisheries and non-destructive) by year 3.</p>	<p>The metrics used instead were from VSLA groups that were closely monitored by the Community Organisers/Local Community Organisers and reported to Net-Works that consolidate/ archive data in the Monitoring and Evaluation database. This included the Social funds (that can be availed by the members for incidental expenses incurred during minor accidents, purchase of medicines, doctor's consultation, death of family members) and environmental funds (used to support MMPA activities e.g. purchase of marker buoys, food during mangrove planting or coastal clean-up). Both the social and environmental funds come from weekly donations from VSLA members of a pre-set amount. VSLA members agree on how funds are used and we are finding these are very empowering in reducing risk and also enabling communities to take charge of managing their own environmental resources. (Section 2.1)</p> <p>Exceeded: For the 3 VSLAs for which we have 3 years of data, average increase in savings per member (equating to HH due to the VSLA rules of membership) was £128 which is a 27% increase in income. For VSLAs completing 2 cycles (=years) the average income increased by an average of 22% (7 VSLAs) and for those who had completed one cycle, an average increase of 28% (7 VSLAs). (Section 2.4)</p> <p>Completed: Livelihoods were diversified to include the following in 8 communities benefitting 703 households. Income from sustainable, non-destructive livelihoods included oyster farming, using the raft method (P55,755; £858), from fish processing (P41,320; £636), driftwood sculpture (P69,327; £1,067), mangrove seedling production (P578,912; £8,906), seaweeds farming (P46,494; £715), ecopark management, entrance fees, donations and associated food business (P224,964; £3,461) and Net-Works net collection (P27,366; £421). (Section 2.2)</p>
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Activity 1.1 Workshop and training-of-trainers e.g. other conservation NGOs on VSLAs	Exceeded: Training was delivered to the following NGOs: IIRR, RARE Philippines, CORDAID, PTFCF through the Training of Trainers Mangrove and Beach Forest training course developed with team members from the Darwin project. ZSL also engaged in the annual VSLA (CoMSCA) summit, including working closely with other NGOs. (Annex 3)
Activity 1.2, At new sites, development of socioeconomic baselines through collection, analysis and feedback of data from household surveys and participatory rural appraisal. Updated data collection and feedback at existing sites.	Completed: The socio-economic and biophysical profiles at each site were completed at all sites. (Year 1 and 2 annual reports).
Activity 1.3 Establishment and fostering of VSLAs in the 10 village sites in four provinces.	Exceeded: 25 VSLAs formed with 495 members (130 male and 382 females) were established over the project period in 10 village sites. (Section 2.1)
Activity 1.4 Replication of VSLAs through Village Agent model i.e. identification and mentoring of VSLA Village Agents.	Exceeded: 11 Village agents were trained across Darwin sites. (Section 2.1)
Activity 1.5 Socioeconomic impact assessment through collection, analysis and feedback of data from household surveys and participatory rural appraisal.	Completed: Biophysical profiles and socioeconomic data were collected at all project sites (Year 1 and 2 annual reports)
Activity 1.6 Training of VSLA members on waste management, coastal protection and rehabilitation and sustainable livelihoods.	Completed: VSLA training conducted (Appendix 51).
<b>Output 2. The Net-Works project is operating in at least 3 of the target villages in Bantayan (Cebu province) and Bohol, with villages feeding into the two sustainable business units (one in Bohol, one in Bantayan) that engage 20 communities in collecting an average of 200kg of discarded fishing nets per month and per village by year 3; cleaning beaches, preventing</b>	<p>Indicator 1 At least 11 tons of discarded nets collected from 5 villages annually and fed into global supply chain through Interface.</p> <p>Indicator 2 100 households earning additional income from NetWorks in year 2 and 300 households earning additional income from year 2.</p> <p>Indicator 3 Business model of Net-Works generates sufficient funds to</p>
<p>Partially completed: 1.95 tonnes were collected across Darwin project sites over the project period (Appendix 22).</p> <p>Completed: A total of 354 households are earning additional income from net-buying (Section 2.2).</p> <p>Not completed: Insufficient nets were collected at project sites to support a local co-ordinator salary.</p>	

<b>ghost fishing, and providing sustainable income.</b>	support a local co-ordinator salary by Year 2.	Completed: 7 villages (Darwin sites) and 3 villages (non-Darwin sites) participated in the annual coastal clean-up where a total of 2,054.78 kilos of waste were collected (Year 2 report).
	Indicator 4 Annual coastal clean-up event implemented in 10 villages.	
Activity 2.1. Scoping site visits to 5 villages in Bantayan and Bohol to assess levels of discarded nets and to introduce the Net-Works concept.		Completed: Scoping visits conducted (Year 1 and 2 annual reports).
Activity 2.2. Implementation of collection systems, through seeding VSLAs with net buying funds or providing direct payments for nets.		Completed: Collection systems in place (Year 2 annual report).
Activity 2.3 Implementation of packaging and transport systems to bale nets and ship them to Net-Works transport hubs for consolidation and export.		Completed: Collected nets shipped to Net-Works transport hubs
Activity 2.4 Monitoring and reporting of income and expenditure as part of Net-Works business model.		Completed: Incorporated into Net-Works business model and M&E system. Net volume from each site tracked (Appendix 22).
Activity 2.5 Annual coastal clean-up event in 10 villages.		Completed: Annual coastal clean-up events in all project sites (Year 1 and 2 reports).
<b>Output 3.</b> <b>Business models developed and implemented at buffer zone sites adjacent to mangrove MPAs that diversify community livelihoods and include income from seaweed farming, mussel culture, ranching sea cucumbers/abalone, and mangrove nurseries.</b>	Indicator 1 Feasibility study report of potential sustainable aquaculture ventures at each of the 10 project sites with community feedback by the end of Year 1.	Completed. The LGU Ivisan has designated Mangroves in Marine Protected Area (MMPA) covering at least 1,500 hectares encompassing the Villages of Balaring and Agustin Navarra while the neighboring villages of Basiao and Cabugao were zoned as mariculture areas good for oyster farming. The Darwin project assisted the oyster farmers to re-establish the oyster farms destroyed by Typhoon Haiyan by conforming to the LGU regulation and introduced the raft method to replace the stake method of oyster farming. An expert on oyster culture was hired by the project to verify the sites designated by the LGU Ivisan as to salinity, temperature, nutrient content and water flow and were found to be favourable. Site scoping were also conducted to check feasibility of sea cucumber/abalone production in Ivisan but was found negative by a SEAFDEC scientist (Section 2.1)
	Indicator 2 Seaweed farms and mussel farming re-established at sites damaged by	Partially completed: Seaweed farming was established. (Section 2.1)

	<p>earthquake/typhoon by the end of Year 1.</p> <p>Indicator 3 Mangrove nurseries operational in at least 8 project sites by the end of Year 1 and supplying government agencies, NGOs and/or private companies by the end of Year 2.</p> <p>Indicator 4 Pilot studies completed (with biological and economic data recorded as part of local university student research projects) for three trials of grow-out of juvenile abalone and sea cucumbers supplied by SEAFDEC at 2 sites by the end of Year 3.</p> <p>Indicator 5 Business plans in place for five livelihoods linked with coastal protection and sustainable marine resource use connected to an action plan for dissemination and replication by the end of Year 3.</p>	<p>Partially completed: Mangrove/ Beach forest seedling production was operational in Pedada and Kodia (Section 2.1)</p> <p>Partially completed: Due to the limitations in viability of aquaculture, student projects (national and international) were completed on other topics of greater priority to the project (Annex 5).</p> <p>Completed: Business plans in place (Appendix 32) and successful Darwin grant submitted to focus on this area (2017-2021).</p>
<p>Activity 3.1 Site visits to 10 villages to conduct habitat mapping, resource assessments and community consultations on livelihood ventures.</p>		<p>Completed: Site visits etc. done (Year 1 and 2 annual reports).</p>
<p>Activity 3.2 Establishing zoned areas for marine livelihood ventures around MPAs and mangrove forests at each project site, with associated local ordinance(s).</p>		<p>Completed: Ordinances in place for MPAs (Section 2.1)</p>
<p>Activity 3.3 Provision of labour, materials and training to rebuild mussel and seaweed farms.</p>		<p>Partially completed: Oyster farms were rebuilt using the raft method with labour, materials and training supplied. A common working facility for boneless dilis production in Basiao and another for driftwood sculpture in Buntod were constructed to improve product quality and community</p>

		production. Support was also given to help rebuild the two damaged ecoparks (Pedada and Oboob) (Section 2.1)
Activity 3.4 Provision of materials and training to establish mangrove nurseries.		Completed: Materials provided and training given (Section 2.1; Appendix 51b).
Activity 3.5 Development of a directory of mangrove nurseries distributed to government, NGOs and private enterprise (through national business networks).		Completed: Directory of mangrove nurseries was developed and distributed thru the support of GiZ supported project (Year 1 annual report).
Activity 3.6 MoA with project plan and budget with SEAFDEC to conduct trials of grow-out of sea cucumber and abalone at two selected sites.		Completed: SEAFDEC provided technical support throughout the project (Section 2.1)
Activity 3.7 Supervision of local university students to monitor grow-out trials at two sites to completion of project theses.		Partially completed: Due to the limitations in viability of aquaculture, student projects (national and international) were completed on other topics of greater priority to the project (Annex 5).
Activity 3.8 Preparation, publication and dissemination of business plans for five livelihood options.		Completed: Business plans in place (Appendix 32) and successful Darwin grant submitted to focus on this area (2017-2021).
Activity 3.9 Publication and dissemination of technical manual, reports and peer-reviewed publications.		Exceeded: We published 5 peer reviewed publications, 1 identification guide, 1 conference proceedings, 2 manuals, as well as science-based posters, leaflets and other outreach materials. We contributed data to the national database on MPAs and used the national standard for MPA Effectiveness Assessment. (Annex 5)
<b>Output 4</b> <b>&gt;1,000 ha of mangrove, seagrass and coral reef habitats are effectively protected through MPA ordinances and community-based forest management agreements (CBFMAs) in four provinces (Bohol, Bantayan Island (Cebu province), Capiz, Iloilo) by year 3.</b>	<p>Indicator 1. Two new MPAs that include mangroves with legal ordinances in place by the end of year 3 in Bantayan Island (Northern Cebu) and Capiz or Iloilo.</p> <p>Indicator 2. MPA infrastructure restored (marker buoys, guardhouse, patrol boats, signage) in two villages in Bohol (Batasan, Matabao) by Year 1.</p> <p>Indicator 3. CBFMAs in place for 3 villages in Capiz and Iloilo by Year 2 (Pedada, Balaring, Buntod) and</p>	<p>Completed: 2 new MMPAs are now established in Bantayan (Kodia and Oboob). (Section 2.1)</p> <p>Completed: By the end of Year 1, the MMPA guard houses in Matabao and Batasan that were damaged by the earthquake in 2013 has completed repairs, the old dilapidated marker buoys were replaced with new ones and a new patrol boat was constructed and deployed in Batasan (Year 1 annual report).</p> <p>Partially completed: We were informed that currently all CBFMA applications have been put on hold by the DENR while they review their policies and tenurial instruments. However, on May 22<sup>nd</sup> 2017 we received notification that the Balaring CBFMA application was approved and proceeding for final signature. This will provide the PO of Balaring</p>

	<p>underway in 3 further villages (provisionally Matabao, Bohol; Obo-ob, Bantayan; Basio, Capiz).</p> <p>Indicator 4. Two MPAs in Bohol (Batasan, Matabao) expanded in area by the end of Year 3 supported by a local ordinance.</p> <p>Indicator 5. Area of mangrove replanted using ZSL's science-based methodology (Primavera et al., 2013) in 10 project sites by the end of Year 3.</p> <p>Indicator 6. Area of mangrove replanted using ZSL's science-based methodology (Primavera et al., 2013) in 10 project sites by the end of Year 3.</p>	<p>(NewBAMA) with 25 year tenurial rights over their mangrove forest. Two Protected Area Community Based Resource Management Programme (PACBARMA) applications of POs in Kodia and Obo-ob were submitted to DENR 7, but were also placed on hold as DENR is undergoing review of tenurial instruments (Section 2.1)</p> <p>Completed: The Batasan MPA was expanded from 21 ha coral reef MPA to 209.93 ha including the mangroves and seagrass beds. The Matabao MPA is maintained at 52.6 ha both are protected by local ordinances, however the neighbouring village of Macaas requested support expanding their MPA (Section 2.1)</p> <p>Completed: Assessments were carried out and planting implemented by communities where appropriate (Section 2.1)</p>
<p>Activity 4.1 Community consultations in Bantayan Island (villages Obo-ob, Kodia), Capiz (Buntod, Balaring) and Iloilo (Pedada) to assess potential sites for new mangrove MPAs.</p>		<p>Completed: Community consultations conducted at project sites (Year 1 Annual Report)</p>
<p>Activity 4.2 Repairs/construction of new guardhouses – redesigned to incorporate scope for livelihood diversification - with marker buoys and signage in Batasan and Matabao, Bohol.</p>		<p>Completed: By the end of Year 1, the MMPA guard houses in Matabao and Batasan that were damaged by the earthquake in 2013 has completed repairs, the old dilapidated marker buoys were replaced with new ones and a new patrol boat was constructed and deployed in Batasan (Year 1 annual report).</p>
<p>Activity 4.3 Engagement with People's Organisations, local, regional and national government to update and secure CBFMAs for Buntod (Capiz), Balaring (Capiz) and Pedada (Iloilo) following Typhoon Haiyan.</p>		<p>Partially completed: We were informed that currently all CBFMA applications have been put on hold by the DENR while they review their policies and tenurial instruments. However, on May 22<sup>nd</sup> 2017 we received notification that the Balaring CBFMA application was approved and</p>

		proceeding for final signature. This will provide the PO of Balaring (NewBAMA) with 25 year tenurial rights over their mangrove forest. Two Protected Area Community Based Resource Management Programme (PACBARMA) applications of POs in Kodia and Obo-ob were submitted to DENR 7, but were also placed on hold as DENR is undergoing review of tenurial instruments (Section 2.1)
Activity 4.4 Establishing and/or strengthening People's Organisation in 3 villages (provisionally Matabao, Bohol; Obo-ob, Bantayan; Basio, Capiz) for CBFMAs.		Completed: Training and support for POs provided (Section 2.1; Appendix 51)
Activity 4.5 Provide training and mentorship for People's Organisation through CBFMA process (as documented in Primavera et al., 2013).		Completed: Training and support for POs provided (Section 2.1; Appendix 51)
Activity 4.6 Community consultations and endorsement (through village and local government hearings and updated ordinance) of revised, expanded boundaries of MPAs in Batasan and Matabao, Bohol.		Completed: The Batasan MPA was expanded from 21 ha coral reef MPA to 209.93 ha including the mangroves and seagrass beds. The Matabao MPA is maintained at 52.6 ha both are protected by local ordinances, however the neighbouring village of Macaas requested support expanding their MPA (Section 2.1)
Activity 4.7 Habitat maps, GPS co-ordinates and biological surveys of revised, expanded boundaries of MPAs in Batasan and Matabao, Bohol		Completed: Maps generated (Section 2.1)
Activity 4.8 Map areas suitable for mangrove re-planting and implement through communities, using plants grown in community nurseries (using methods described in Primavera et al., 2013).		Completed: Maps generated to guide planting (Section 2.1)
Activity 4.9 Using GIS and satellite maps, produce map of area and habitats protected through project.		Completed: Maps for all the project sites have been generated (Section 2.1)
Output 5 <b>10 mangrove MPAs and community-based mangrove forest management plans are being implemented by year 2 from a baseline of 0, with MPAs</b>	Indicator 1 MPA and mangrove forest management plans for all sites by Year 3  Indicator 2 Project sites featured in relevant local government Coastal	Partially completed: MPA management plans completed and approved for all sites except Oboob which is still a draft at the end of the project period (Section 2.1).

<p><b>enforced by 20 legally deputised fish and forest wardens, rated between Levels 3-5 under the national MPA Rating System (MEAT).</b></p>	<p>Resource Management Plans by Year 3</p> <p>Indicator 3 Deputised fish and forest wardens by Year 3</p> <p>Indicator 4 Number of patrols, apprehensions and fines conducted by fish and forest wardens documented by Year 3</p> <p>Indicator 5 Species and habitat survey data reported annually</p> <p>Indicator 6 Open access database of 14 years of MPA monitoring data online by the end of Year 2</p> <p>Indicator 7 MEAT rating generated annually</p>	<p>Completed: Project sites in Coastal Resource Management Plans (Section 2.1)</p> <p>Exceeded: 10 fish wardens sustained in Ivisan, 21 forest wardens trained and deputized in Panay Darwin sites, 4 fish wardens trained and deputized in Oboob, Bantayan and 7 fish wardens trained and deputized in Kodia, Madridejos (Section 2.1)</p> <p>Completed: 19 apprehensions in Tubigon and 18 apprehensions in Ivisan, with documentation in place at all project sites (Section 2.1)</p> <p>Completed: Species and habitat surveys completed annually at project sites and compiled into a database (Section 2.1)</p> <p>Partially completed: Available as an Access database on request (Section 2.1)</p> <p>Completed: MEAT ratings completed and submitted (Section 2.1)</p>
<p>Activity 5.1 Formation and/or strengthening of MPA management committees</p>		<p>Completed: MPA management committees were formed and/or strengthened (Section 2.1)</p>
<p>Activity 5.2 Training of Management Committees in MPA management</p>		<p>Completed: Training delivered to MMCs (Appendix 51)</p>
<p>Activity 5.3 Training of People’s Organisations in mangrove ecology and management</p>		<p>Completed: POs were a focal audience for the Mangrove and Beach Forest training courses, reaching 1,250 participants in total (734 participants as part of the Darwin project). (Section 2.1, Section 3.6, Appendix 51b)</p>
<p>Activity 5.4 Community training in the role of natural ecosystems in natural disaster mitigation</p>		<p>Completed: Training workshops on Community Managed Disaster Risk Reduction (CMDRR) were conducted in all the Darwin sites in 2014 and 2015 (Year 1 and 2 reports, Section 2.1)</p>

Activity 5.5 Development of 3 year management plans for each site	Completed: Management plans for mangroves and MPAs as ecosystems were included in the CMDRR plans of the Darwin sites (Year 2 annual report)
Activity 5.6 Fish/forest warden training with local government agency partners	Exceeded: 10 fish wardens sustained in Ivisan, 21 forest wardens trained and deputized in Panay Darwin sites, 4 fish wardens trained and deputized in Oboob, Bantayan and 7 fish wardens trained and deputized in Kodia, Madridejos (Section 2.1)
Activity 5.7 Review of patrols, apprehensions and fines	Completed: 19 apprehensions in Tubigon and 18 apprehensions in Ivisan, with documentation in place at all project sites (Section 2.1)
Activity 5.8 Bi-annual surveys of MPA and mangrove sites	Completed: Species and habitat surveys completed annually at project sites and compiled into a database (Section 2.1). Surveys were adjusted to one survey by project team biologists and a second by communities as a participatory monitoring approach.
Activity 5.9 Open access database of MPA monitoring data (over past 14 years)	Partially completed: Available as an Access database on request (Section 2.1)
Activity 5.10 Submission of data for MEAT ratings	Completed: MEAT ratings completed and submitted (Section 2.1)
Activity 5.11 Publication and dissemination of results at national conferences, workshops and in peer-reviewed publications.	Exceeded: Delivered 1 national conference, 1 international conference, 2 workshops, 20 national and international conference presentations over the project period and published 5 peer-reviewed publications (Annex 5)
<p>Output 6</p> <p>Side event at CBD SBSTTAs and/or COP and presentation at the 2014 IUCN World Parks Congress provide the forum for dissemination, that result in stakeholder cross-visits and training sessions to replicate the approach in 1 DFID priority countries with mangroves.</p>	<p>Indicator 1 Project information presented at CBD SBSTTA and/or COP by Year 3</p> <p>Indicator 2 Project presented at 2014 IUCN World Parks Congress by Year 1</p> <p>Indicator 3 One stakeholder cross-visit and training session in 1 DFID priority country with mangroves by Year 3.</p> <p>Completed: Our presentation proposals were accepted for the World Parks Congress in 2014. The Net-Works film featuring the Darwin project was shown on Saturday 15th November 2014 at the IUCN World Parks Congress in Sydney. On Monday 17 November 2014, a Stream 4 presentation by Dr Nick Hill (co-authored by Heather Koldewey and Jurgenne Primavera) entitled 'Building resilience through recovery: mangroves and MPAs in the Philippines' showcased the Darwin project. Nick also presented an e-poster and speed presentation on 'Net-Works: from fishing nets to carpet tiles' in the same Stream 4. The presentations were well attended and received many questions. (Section 2.1)</p> <p>Completed: A proposal was submitted and accepted by the World Parks Congress (12th-29th November 2014, Sydney Australia) and Dr Nick Hill from the Darwin team delivered a presentation within the 'Ecosystem</p>



		<p>restoration and protected areas: delivering socio-economic and environmental benefits' session. Direct interventions from the Darwin project team resulted in the inclusion of mangroves in the output strategy from the WPC Marine Theme, which were absent from the initial draft wording. (Section 2.1)</p> <p>Partially completed: We hosted stakeholder cross-visits and training sessions with colleagues from Costa Rica and Viet Nam. We built collaborations and joint training with the regional offices of international donor/implementing agencies GIZ, RARE and CORDAID. (Section 2.1) Heather Koldewey and Jurgenne Primavera shared project examples at an international symposium they co-organised 'Turning the tide on mangrove loss' international symposium between IUCN Mangrove Specialist Group, ZSL and Xiamen University, China in November 2015 and published a special issue conference proceedings in Marine Pollution Bulletin. (Annex 5) Dialogue held with contacts in Bangladesh (University of Dhaka), but due to political instability was unable to progress. The Net-Works team delivered a cross visit to our Darwin project in Mozambique in 2016 and conducted training on MPA establishment and management. A scoping visit to Thailand, Indonesia and Myanmar in 2016 was conducted to explore the potential for mangrove project and Net-Works replication. As a result, Net-Works replication is underway in Indonesia (Section 2.1)</p>
<p>Activity 6.1 Inclusion of project activities in Philippines National Report to the CBD.</p>		<p>Completed: The last formal report to the CBD was completed in 2009. The new Philippines Biodiversity Strategy and Action Plan (2015-2028) lists ZSL-Philippines as one of the agencies who participated in the updating process (Annex 3).</p>
<p>Activity 6.2 Submission, acceptance and delivery of presentation at 2014 IUCN World Parks Congress – Session on Ecological Resilience, Stream 1.</p>		<p>Completed: Our presentation proposals were accepted for the World Parks Congress in 2014. The Net-Works film featuring the Darwin project was shown on Saturday 15th November 2014 at the IUCN World Parks Congress in Sydney. On Monday 17 November 2014, a Stream 4 presentation by Dr Nick Hill (co-authored by Heather Koldewey and Jurgenne Primavera) entitled 'Building resilience through recovery: mangroves and MPAs in the Philippines' showcased the Darwin project. Nick also presented an e-poster and speed presentation on 'Net-Works:</p>

	from fishing nets to carpet tiles' in the same Stream 4. The presentations were well attended and received many questions. (Section 2.1)
Activity 6.3 Cross-visit and training session to 1 DFID priority country	Partially completed: Dialogue held with contacts in Bangladesh (University of Dhaka), but due to political instability was unable to progress. The Net-Works team delivered a cross visit to our Darwin project in Mozambique in 2016 and conducted training on MPA establishment and management. A scoping visit to Thailand, Indonesia and Myanmar in 2016 was conducted to explore the potential for mangrove project and Net-Works replication. As a result, Net-Works replication is underway in Indonesia (Section 2.1)

## Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
<b>Training Measures</b>							
1a	Number of people to submit PhD thesis	1	UK	Female	Planning for change: Managing mangroves in the face of climate change	English	With Institute of Zoology and University College London co-supervised by Heather Koldewey and Jurgenne Primavera
1b	Number of PhD qualifications obtained	1	UK	Female	Planning for change: Managing mangroves in the face of climate change	English	With Institute of Zoology and University College London co-supervised by Heather Koldewey and Jurgenne Primavera
2	Number of Masters qualifications obtained	2	Canada	Female	The relationship between community-based management and vulnerability: A case of community-based MPAs in the Philippines impacted by an earthquake	Both in English	With Stockholm Resilience Centre, University of Stockholm, co-supervised by Heather Koldewey  Ashley submitted follow up grant to National Geographic that was unsuccessful
			UK	Female	Contribution of Marine Protected Areas to current and future		With University of Exeter Cornwall campus co-supervised by Nick Hill

					management of the Philippine blue swimmer crab ( <i>Portunus pelagicus</i> ) fishery		
3	Number of other qualifications obtained	33	Philippines	23 male, 10 female	Fish warden/Wildlife Enforcement Officer training	English and Cebuano/Ilongo	With DENR
4a	Number of undergraduate students receiving training	1	UK	Female	2 month internship: Literature review of traditional uses of Beach Forest.  Literature review of sea turtles in the Philippines	English	With University of Exeter Cornwall campus
4b	Number of training weeks provided to undergraduate students	1	UK	Female/ Male		English	Lectures and workshops delivered by Heather Koldewey and Nick Hill at the University of Exeter Cornwall campus
		2	Philippines	Female		English	Lectures delivered by Jurgenne Primavera
4c	Number of postgraduate students receiving training (not 1-3 above)	1	UK	Female/ Male		English	Lectures and workshops delivered by Heather Koldewey and Nick Hill at the University of Exeter Cornwall campus
		2	Philippines	Female		English	Lectures delivered by Jurgenne Primavera
4d	Number of training weeks for postgraduate students	1	UK	Male	Global analysis of changes in diversity and ecosystem	English	Completed 3 out of 4 years of NERC CASE PhD studentship co-supervised by Heather Koldewey with Philippines as one of field sites. Will submit after end of Darwin project.

					structure of tropical coral reefs due to localised human impacts.		
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)						
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	672	Philippines	350 (52%) men and 322 (48%) women	Members of People's Organizations associated with the project	English/Ilongo/Cebuano	
		476	Philippines	110 men, 366 women	VSLAs formed across 4 provinces (Cebu, Bohol, Iloilo and Capiz)	English/Ilongo/Cebuano	
		11	Philippines	4 men, 7 women	Village agents trained in VSLAs formation	English/Ilongo/Cebuano	
		40	Philippines		Local research assistants trained	English/Ilongo/Cebuano	

					in socioeconomic surveys		
		385	Philippines	150 men, 235 women	Livelihood training e.g. oyster culture, driftwood carving	English/Ilongo/Cebuano	Different training sessions delivered but some individuals accessed more than one livelihood training opportunity.
		102	Philippines	40 men, 62 women	Organisational development training (within communities) e.g. financial management, conflict resolution, leadership skills	English/Ilongo/Cebuano	Different training sessions delivered but some individuals accessed more than one livelihood training opportunity.
		734	Philippines		Mangrove and Beach Forest training courses	English	Included community groups, government, NGOs, students, corporates
6b	Number of training weeks not leading to formal qualification						
7	Number of types of training materials produced for use by host country(s) (describe training materials)	2x manuals	Philippines	Male lead author  Female lead author	Proceedings of the 2 <sup>nd</sup> National Mangrove Conference (2015)  Community-based Mangrove Rehabilitation Manual	All in English	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>  <a href="http://www.ptfcf.org/data/uploads/mangrove-rehab_training-manual.pdf">http://www.ptfcf.org/data/uploads/mangrove-rehab_training-manual.pdf</a>

				Female lead author	Manual for Trainers Mangrove and Beach Forest Rehabilitation and Conservation (2016)		<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>
		1 x leaflet	Philippines	Female lead author	Sustainable harvesting of Imbao, <i>Anodontia philippiana</i>	English	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>
		6 x posters	Philippines	Female lead authors (4 different people)	No planting on Seagrass Beds No planting on Seagrass Beds Common Mangrove Species (reprint) What is a Fish Sanctuary? (reprint) Save Our Seagrass Beds! Save the Dugong! Re-imagining strategies for climate change-induced sea-level rise: the case of coral islands in	English	Hard copies available on request

					Tubigon, Bohol, Philippines		
		1 x tidal calendar	Philippines	Female lead author	2016 Tidal Calendar	English	Hard copies available on request
		1x community flipchart	Philippines	Female lead author	Community-based Mangrove Rehabilitation	English	Hard copies available on request
<b>Research Measures</b>		<b>Total</b>	<b>Nationality</b>	<b>Gender</b>	<b>Title</b>		
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)						
10	Number of formal documents produced to assist work related to species identification, classification and recording.	1	Philippines	Female	Field guide to Philippine mangroves	English	<a href="http://www.ptfcf.org/data/uploads/field-guide-to-phil.-mangroves.pdf">http://www.ptfcf.org/data/uploads/field-guide-to-phil.-mangroves.pdf</a>



11a	Number of papers published or accepted for publication in peer reviewed journals	5	UK	Male	Friess et al. (2015). Policy challenges and opportunities for the conservation of mangrove forests: a Southeast Asian perspective. Conservation Biology.	All in English	<a href="http://onlinelibrary.wiley.com/doi/10.1111/cobi.12784/abstract">http://onlinelibrary.wiley.com/doi/10.1111/cobi.12784/abstract</a>
			UK	Male	Friess et al. Eds (2016). Turning the tide on mangrove loss. Marine Pollution Bulletin		<a href="http://www.sciencedirect.com/science/journal/0025326X/109/2">http://www.sciencedirect.com/science/journal/0025326X/109/2</a>
			UK	Female	Duncan et al. (2016). Multiple ecosystem services delivery in rehabilitated mangroves: a case study on the relative benefits of abandoned pond reversion from Panay Island, Philippines. Marine Pollution Bulletin		doi: 10.1016/j.marpolbul.2016.05.049
			USA		Long et al. (2016). Damage		<a href="https://doi.org/10.1016/j.marpolbul.2016.06.080">https://doi.org/10.1016/j.marpolbul.2016.06.080</a>  <a href="http://www.sciencedirect.com/science/article/pii/S0025326X16303484">http://www.sciencedirect.com/science/article/pii/S0025326X16303484</a>

			Philippines	Male  Female	and recovery assessment of the Philippines' mangroves following Super Typhoon Haiyan. Marine Pollution Bulletin.  Primavera et al. (2016). Preliminary assessment of post-Haiyan mangrove damage and short-term recovery in Eastern Samar, central Philippines. Marine Pollution Bulletin.		
11b	Number of papers published or accepted for publication elsewhere						
12a	Number of computer-based databases established (containing species/generic information) and						

	handed over to host country						
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country						
13a	Number of species reference collections established and handed over to host country(s)						
13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	2 workshops	Philippines		Workshops: MPA Connectivity Workshop (2014)	All in English	

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
		2 symposia	Philippines International		VSLA workshop (2014). National Mangrove Conference September 2015 International Mangrove Symposium Xiamen, China 2015		Proceedings published (see Annex 5) 2 peer reviewed publications and one editorial (see Annex 5)
14b	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/ disseminated.	3 1 6	Philippines/UK Philippines Philippines	1 Male 1 female 1 Male 1 female Female	Annual CoMSCA summit (2014-2016) VSLA Training of Trainers workshop Philippines Coastguard Conference (2015) OPARR conference (2015) National symposium of Biology Teachers of	All in English	Does not include ~20 lectures given in Philippines and internationally

Dissemination Measures	Total	Nationality	Gender	Theme	Language	Comments
	10	UK	Female	Philippines (2015) National symposium of Philippine Native Plant Conservation Society (2015) DENR, 1 <sup>st</sup> Philippine Environmental Summit (2016) Conservation Asia conference (Indonesia) (2016) Plasticity Forum, Cascais, Portugal (2015). Guest speaker Bevan Series on Sustainable Fisheries, University of Washington in Seattle (2015).		

Dissemination Measures	Total	Nationality	Gender	Theme	Language	Comments
		UK	Male	Future of Food Security, ZSL, London (2015).		
		UK	Female	Cambridge Conservation Initiative (2015)		
				The Living Planet Symposium (2016)		
				International Aquarium Congress, Vancouver (2016).		
				The Cornwall Wildlife Trust's 'Your Shore' annual conference (2016).		
				School of Social Entrepreneurs, Uni of Exeter Penryn Campus (2017).		
				Wild Film Festival		

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
			UK	Male	Falmouth (2017)  Plenary speaker at the International Conservation Science Student conference, Cambridge University (2017).  Postgraduate Marine Biology Symposium Plymouth (2017)		

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		MPA guardhouses, marker buoys, signage and patrol vessels
21	Number of permanent educational, training, research facilities or organisation established	0	
22	Number of permanent field plots established	4	4 MPAs established or expanded with ordinances and GIS maps totalling 2,111.43 ha
		3 CBFMAs (once approved), 1x PACBARMA	3x CBFMA applications for NewBama, Buntod Katibyugan and BPFA were submitted, plus 2x PACBARMA applications for Kodia and Obo-ob which, if approved, will require community monitoring.

<b>Financial Measures</b>		<b>Total</b>	<b>Nationality</b>	<b>Gender</b>	<b>Theme</b>	<b>Language</b>	<b>Comments</b>
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work						A mix of in kind contributions and match funding (details in Section 7.2)



## Annex 4 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	√
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	√
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	√
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	√
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	√
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	√
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	

14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	√
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	√
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	√
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

## Annex 5 Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details. Mark (\*) all publications and other material that you have included with this report

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. website link or publisher)
2016 Tidal Calendar	Calendar	Primavera, J., Coching, J.D. (2016)	Female	Philippines	Makinaugalingon Press, Iloilo City	Hard copy available on request
Manual for Trainers Mangrove and Beach Forest Rehabilitation and Conservation	Manual	Primavera, J.H.P, Savaris, J.P., Loma, R.J.A., Coching, J.D., Montilijao, C.L.(2016)	Female	Philippines	Makinaugalingon Press, Iloilo City	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>
Proceedings of the 2 <sup>nd</sup> National Mangrove Conference	Proceedings	Labrado, G., Sadio, V. (2015)	Male	Philippines	Makinaugalingon Press, Iloilo City	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>
No planting on Seagrass Beds	Poster	Loma, R.J.A. 2014	Female	Philippines	Makinaugalingon Press, Iloilo City	Hard copy available on request
Common Mangrove Species (reprint)	Poster	Primavera, J.H.P., 2013	Female	Philippines	Makinaugalingon Press, Iloilo City	Hard copy available on request
What is a Fish Sanctuary? (reprint)	Poster	Savaris, JP, 2013	Female	Philippines	Makinaugalingon Press, Iloilo City	Hard copy available on request
Save Our Seagrass Beds! Save the Dugong!	Poster	Loma, R.J.A., 2016	Female	Philippines	Makinaugalingon Press, Iloilo City	Hard copy available on request
Policy challenges and opportunities for the conservation of mangrove forests: a Southeast Asian perspective.	Peer-reviewed publication	Friess, D.A., Thompson, B.S., Brown, B., Amir, A.A., Cameron, C., Koldewey, H.J., Sasmito, S.D., Sidek, F. (2015)	Male	UK	Conservation Biology	<a href="http://onlinelibrary.wiley.com/doi/10.1111/cobi.12784/abstract">http://onlinelibrary.wiley.com/doi/10.1111/cobi.12784/abstract</a>
Community-based Mangrove Rehabilitation Manual	Manual	Primavera JH, Savaris JP, Bajoyo B, Coching, JD, Curnick DJ, Golbeque RL, Guzman AT, Henderin JQ, Joven RV, Loma RA, Koldewey, HJ (2015)	Female	Philippines	Philippines Tropical Forest Foundation, Manila	<a href="http://www.ptfcf.org/data/uploads/mangrove-rehab_training-manual.pdf">http://www.ptfcf.org/data/uploads/mangrove-rehab_training-manual.pdf</a>

Sustainable harvesting of Imbao, <i>Anodontia philippiana</i>	Leaflet	Primavera, J.H., Lebata-Ramos, M.J.H (2015)	Female	Philippines	ZSL Philippines, Iloilo City	<a href="http://www.zsl.org/mangroves">www.zsl.org/mangroves</a>
Field guide to Philippine mangroves	Identification guide	Primavera, J.H. (2015)	Female	Philippines	Philippines Tropical Forest Foundation, Manila	<a href="http://www.ptfcf.org/data/uploads/field-guide-to-phil.-mangroves.pdf">http://www.ptfcf.org/data/uploads/field-guide-to-phil.-mangroves.pdf</a>
Turning the tide on mangrove loss	Peer-reviewed publication	Edited by Daniel Friess, Shing Yip Lee and Jurgenne Primavera (2016)	Male	UK	Marine Pollution Bulletin Volume 109, Issue 2, Pages 673-782	<a href="http://www.sciencedirect.com/science/journal/0025326X/109/2">http://www.sciencedirect.com/science/journal/0025326X/109/2</a>
Multiple ecosystem services delivery in rehabilitated mangroves: a case study on the relative benefits of abandoned pond reversion from Panay Island, Philippines.	Peer-reviewed publication	Duncan, C., Pettorelli, N., Koldewey, H.J., Thompson, J.R., Primavera, J.H.P. (2016)	Female	UK	Marine Pollution Bulletin. 109 (2): 772-82.	doi: 10.1016/j.marpolbul.2016.05.049
Damage and recovery assessment of the Philippines' mangroves following Super Typhoon Haiyan	Peer-reviewed publication	Long, J., Giri, C., Primavera, J.H., Trivedi, M. (2016)	Male	USA	Marine Pollution Bulletin Volume 109, Issue 2, 30 August 2016, Pages 734-743	<a href="https://doi.org/10.1016/j.marpolbul.2016.06.080">https://doi.org/10.1016/j.marpolbul.2016.06.080</a>
Preliminary assessment of post-Haiyan mangrove damage and short-term recovery in Eastern Samar, central Philippines	Peer-reviewed publication	J.H. Primavera, M. dela Cruz, C. Montilijao, H. Consunji, M. dela Paz, R.N. Rollon, K. Maranan, M.S. Samson, A. Blanco (2016)	Female	Philippines	Marine Pollution Bulletin, Volume 109, Issue 2, 2016, Pages 744-750	<a href="http://www.sciencedirect.com/science/article/pii/S0025326X16303484">http://www.sciencedirect.com/science/article/pii/S0025326X16303484</a>
Planning for change: managing mangroves in the face of climate change.	PhD Thesis	Clare Duncan (2016)	Female	UK	University College London	University College London
Post -disaster recovery trajectories and community-based management: A case of community-based marine protected areas and their recovery from an earthquake in Bohol, Philippines	MSc Thesis	Ashley Perl (2016)	Female	Canada	Stockholm Resilience Centre, Stockholm University	Stockholm University

Contribution of Marine Protected Areas to current and future management of the Philippine blue swimmer crab ( <i>Portunus pelagicus</i> ) fishery	MSc Thesis	Fiona Birch (2016)	Female	UK	University of Exeter	University of Exeter
Literature review of traditional uses of Beach Forest.  Literature review of sea turtles in the Philippines	Internship	Flora Rendell-Bhatti (2016)	Female	UK	University of Exeter	June-July 2016
Inundation of mushroom corals to a heavily dynamited Philippine reef	Peer-reviewed publication	D.T.I. Bayley (2017)	Male	UK	Coral Reef journal (in review)	University College London/Natural History Museum/Institute of Zoology
Small island communities in the Philippines prefer local measures to relocation in response to sea-level rise	Peer-reviewed publication	Jamero, M.L., Motoharu Onuki, M., Esteban, M., Billones-Sensano, X.K., Tan, N., Nellas, A., Takagi H., Danh Nguyen, T., Valenzuela, V.P. (2017)	Female	Philippines	Nature for Climate Change: Paper #NCLIM-16121995B (in review)	Tokyo University
Re-imagining strategies for climate change-induced sea-level rise: the case of coral islands in Tubigon, Bohol, Philippines	poster (PDF)	Jamero, M.L. (2017)	Female	Philippines	ZSL Philippines, Cebu office, Cebu City	Hard copy available on request
New record of species <i>T. halassina spinosa</i> from the Philippines	Peer-reviewed publication	Bedi, A.M.B., Primavera, J.H. (2017)	Female	Philippines	Philippine Journal of Science (in review)	Result of 3 month internship done through Analyses et Techniques d'Inventaires de la Biodiversité Université de Claude Bernard, Lyon
Investigating Stakeholder perception decline: making sense of multiple theories of change	Peer-reviewed publication	Horowitz, J., Pressey, R.L., Gurney, G., Wenger, A., Pahang, K. (2017)	Male	USA	(advanced draft but not yet submitted for publication)	Australian Research Council Centre of Excellence for Coral Reef Studies, James Cook University, Townsville, Queensland 4811, Australia
Community-based Mangrove Rehabilitation	Flip Chart for communities	Primavera, J.H. and Loma RJA (2017)	Female	Philippines	In 3rd draft	

## Annex 6 Darwin Contacts

To assist us with future evaluation work and feedback on your report, please provide details for the main project contacts below. Please add new sections to the table if you are able to provide contact information for more people than there are sections below.

<b>Ref No</b>	20-010
<b>Project Title</b>	Linking community resilience and sustainable coastal protection in the Philippines
<b>Project Leader Details</b>	
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